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Program and Abstracts

**Universidade Federal Rural do Rio de Janeiro
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**Programa de Pós Graduação em
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Program

All times are listed in PM GMT-3

Time	June, 07
8:00 - 9:30	Ferramentas digitais para o ensino remoto Marco Antônio Pereira Araújo - IF Sudeste MG
10:00 - 12:00	Saúde mental na pós-graduação: pode ser diferente? Jairo Pinheiro da Silva - UFRRJ
14:00 - 15:00	Tutorial para preenchimento do Lattes Douglas Sathler dos Reis - UFVJM
16:00 - 17:00	Alongamento como um aliado para o estudo Marcus Vinícius Freitas Rodrigues - UFRRJ
17:30 - 19:00	Ética em Ciência. Abusos na co-autoria de trabalhos Gervásio H. Bechara - PUCPR
Time	June, 08
08:30 - 09:00	Opening Ceremony
9:00 - 10:00	Capivaras, carrapatos e febre maculosa Marcelo Labruna USP/Brazil
10:45 - 11:45	Controle de carrapatos com óleos essenciais: busca por interações sinérgicas / Óleos essenciais no controle de pulgas: bioensaios e desenvolvimento de formulações Caio Monteiro - UFG e Yara Cid - UFRRJ/Brazil
14:00 - 15:00	Can we prevent the next Pandemic through the One Health Approach ? Douglas McIntosh - UFRRJ/Brazil
15:30 - 16:30	Experiências internacionais em Diagnóstico Microbiológico Veterinário Grazieli Mabone - University of Guelph/ Canada
17:00 - 18:00	Host manipulation by parasites: evolution, mechanisms and consequences Robert Poulin - University of Otago/New Zeland
18:00 - 18:30	Closing Ceremony

ISVS #01

ANALYSIS OF THE VARIANCE OF THE GEOGRAPHICAL DISTRIBUTION OF CONFIRMED CASES OF MALARIA EXTRA AMAZÔNIA LEGAL DURING 2013 TO 2018

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Keywords: one health, Plasmodium spp., geoespacial analysis

In Brazil, malaria is an acute, non-contagious febrile infectious disease, caused by protozoa of the genus *Plasmodium* spp. and transmitted by the female vector of the *Anopheles* spp. The objective was to characterize, through geoprocessing analysis, the variance of the distribution of confirmed cases with an infection site external to the Amazon region. Through data from the Ministry of Health, information on the disease was collected during 2013 to 2018. Determination of the variance distribution was recommended by the Inverse Distance Distancing method to determine patterns of aggregation and geospatial irregularities. 3,571 cases (average of 595.16 cases per year) were reported in the extra-Amazon region, originating from 462 municipalities. Geospatial distribution showed stability in all years in the coastal region of the northeast and southeast, while in the central-west region it presented two major focuses of predominance in Goiás. Focuses on stability and agglomeration indicate the endemic form present in the extra Amazon region, this shows there is the presence of determinant eco-epidemiological factors that differentiate between biomes. Geospatial characterization of the occurrence of malaria allows adequate establishment of prophylactic measures in the different areas to improve the unique health of the Brazilian population, requiring a greater concentration of public surveillance actions in the southeast, northeast and midwest regions.

ISVS #02

ASSOCIATION OF IVERMECTIN WITH PHYTOCHEMICALS UNDER STRAINS OF *HAEMONCHUS CONTORTUS* SENSITIVE AND RESISTANT TO ANTHELMINTICS

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Keywords: ivermectin, phytochemicals, verapamil, glycoprotein P, resistance

Resistance to ivermectin (IVM) is related to glycoprotein P (PgP), responsible for cell efflux. The association of drugs and phytochemicals that modulates PgP activity to increase efficacy is promising. The aim of this study was to test IVM isolated and associated with a Procyanidin (PRC) and Pentagalloylglucose (PTG) in a larval development test with strains of *Haemonchus contortus* sensitive (HcS) and resistant (HcR) to obtain LC90. IVM was tested in concentrations (ug/mL) from 10¹ to 10⁻⁴. Verapamil (VP) is a standard PgP modulator, used as a positive control from 10² to 10⁻⁴, PRC and PTG from 10² to 10⁻⁴. With the LC90 of each compound the associations were established. IVM presented LC90 as 0.01 µg/mL in HcS and 0.4 ug/mL in HcR. VP presented 43 ug/mL in HcS and 30 ug/mL in HcR. PRC in HcS presented 10.38 ug/ml and 9.38 ug/ml in HcR. PTG in HcS was 160.33 µg/mL and 41.45 µg/mL in HcR. The results of the associations of IVM+PTG was 0.1 ug/mL in both strains; IVM+PRC was a 2.1 ug/mL in HcS and 0.04 ug/mL for HcR. In HcR the association with VP demonstrated an increase in the effectiveness of IVM (LC90: 0.01 ug/mL), suggesting an effect caused by VP. In HcS, no differences were observed in the LC90 of IVM+VP in relation to isolated IVM (0,01 ug/mL), suggesting the absence of PgP. These results demonstrate that the action of phytochemicals associated with drugs should be better investigated to elucidate the mechanism of interaction.

ISVS #03

CASE REPORT OF ACANTHOCEPHALA IN A CAPUCHIN MONKEY (*SAPAJUS APELLA*) ROAD-KILLED IN NORTH PARANÁ

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Keywords: Wild animals, acanthocephala, parasitology

The phylum Acanthocephala has no digestive tract, it has a proboscis with hooks in the anterior region, with the ability to retract. The current sharing of the environment between animals and humans has caused an ecological imbalance. Mortality from vehicle collisions is the most visible impact on highways in wildlife. With the high number of animals run over, researchers have been interested in using these animals as study material. The aim of the present study was to report the presence of Acanthocephala in the stomach of a capuchin monkey (*Sapajus apella*). The place where the animal was road-killed was mapped, the animal identified, and the gastrointestinal tract was assessed. The feces were subjected to coproparasitological techniques of spontaneous sedimentation, floating in hypersaturated NaCl solution and centrifugal flotation in zinc sulfate. The coproparasitological analyzes were negative, but an adult helminth of the phylum Acanthocephala was found fixed in the animal's stomach. Considering that the phylum Acanthocephala has gaps to be filled in relation to information related to taxonomy and ecology, especially in wild animals, the present report is of great importance to stimulate the understanding of this phylum.

ISVS #04

CHARACTERIZATION OF ANEMOPHILOUS FUNGI IN THE VETERINARY HOSPITAL OF THE CENTER OF AGRARIAN SCIENCES OF THE FEDERAL UNIVERSITY OF PARAÍBA – BRAZIL

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Keywords: Fungal microbiota; Opportunists; Contamination

Anemophilous fungi are widely found in atmospheric air, through the sedimentation of their spores they can become contaminants, proving to be opportunistic and turning into potential pathogens for men and animals. Thus, there was a need for an aeromicrobiological investigation of the anemophilous fungal microbiota in various sectors of the Veterinary Hospital of the Center of Agrarian Sciences of the Federal University of Paraíba, Areia-PB, Brazil. The study was carried out in February 2021, analyzing nine sectors of the hospital, Ambulatory I, II and III, Clinical Pathology Laboratory, Preventive Laboratory, Surgical Center, Infectious Diseases Internment, Pharmacy and Reception. For the collection, it was used the method of exposing Petri dishes to air containing Sabouraud Dextrose Agar, the collected samples went through an incubation period of seven days. For identification, macro and microscopic analyzes were carried out observing the pigmentation, texture and shape of the colonies developed *in vitro*. Thus, seven genera of anemophilous fungi were found *Aspergillus* spp., *Cladosporium* spp., *Penicillium* spp., *Monilia* spp., *Fusarium* spp., *Curvularia* spp. and *Drechslera* spp. The Ambulatory I was considered the most abundant environment in terms of the presence of these microorganisms. The study data send an alert to hospital visitors, since most of the diagnosed fungi are considered harmful to human and animal health.

ISVS #05

COMPARISON OF FACIAL EXPRESSION EVALUATION BY THE HORSE GRIMACE SCALE (HGS) ON IMAGES WITH AND WITHOUT BACKGROUND

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Keywords: Equine, HGS, Photo

The identification of pain in advance of negative behavioral/physiological changes in horses is hampered by the restricted verbal interaction with humans and the highly masked vulnerability behavior observed in the species. But scales that use the identification of anatomo-physiological features of facial behavior can be applied considering the prototypical configurations, referred to as facial action units (FAU[s]), and are an important tool in pain recognition. This work aimed to assess through the application of the Horse Grimace Scale (HGS), the effect that removing the background of the photos can cause in this evaluation. The facial region of ten horses were photographed at two different times and the same images were replicated to background removal using ImageJ® and randomly included in the evaluation dataset. Three trained evaluators in use of this scale assigned scores for the six FAUs described in the HGS and the sum of FAUs values were compared for each animal with and without background. The results were evaluated by Friedman's test using the IBM SPSS Statistics. Comparing statistically the results of the evaluations, the removal of the background did not impact a change in the assessment by HGS ($p>0.05$). However, the evaluators reported descriptively that when the color of the animal's coat was very similar to the colors of the photo background, the removal of the background made the evaluation easier.

ISVS #06

DETECTION OF EXTENDED-SPECTRUM-BETA-LACTAMASE(ESBL)-PRODUCING STRAINS FROM NECROPSY ENVIRONMENT

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Keywords: Superbugs; ESBL production; Public Health and One Health

The World Health Organization (WHO) has considered the emergence and spread of antimicrobials resistance as one of the three main Public Health threats in the 21st century. In this scenario, carbapenems-resistant and extended-spectrum-beta-lactamase(ESBL)-producing bacteria were classified as critical superbugs. Despite the understanding of the multifactorial origin of antimicrobials resistance, little is known about the contribution of animal production, clinical care, and necropsy environments for the maintenance of genes and the consequent spread of resistance. The present study aimed to evaluate ESBL-producing bacteria in samples from necropsied animals in the Pathological Anatomy Sector of UFRRJ. Of the 89 samples collected from 22 animals, 82 strains of the order Enterobacterales were isolated, characterized phenotypically and by MALDI-TOF. The ESBL phenotypic research was carried out using screening and confirmatory antibiograms recommended by CLSI. Eighteen isolates (22%) showed resistance to beta-lactams and five (6%) were positive for ESBL phenotypic research. Research on the blaSHV and blaCTX-M genes revealed that 60% (3/5) of the strains had genes encoding ESBL, and two strains had both genes. Such results reinforce the need to monitor these strains in the veterinary environment in order to implement safety protocols for handling and disposing of carcasses in the necropsy environment.

ISVS #07

DETECTION OF LEISHMANIA SP. IN HOUSEHOLD CAT IN ENDEMIC AREA FOR VISCERAL LEISHMANIOSIS IN RIO DE JANEIRO

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Keywords: Domestic cat, Leishmania sp., Diagnostic, Zoonosis.

Leishmaniasis are infectious, parasitic and zoonotic diseases caused by protozoa of the genus *Leishmania*, which affects domestic animals, including the cat. This study investigated a suspected infection by *Leishmania* sp. in a cat from the Volta Redonda, RJ, an endemic region for canine visceral leishmaniasis. In view of the progress of the presence of dogs and cats in the homes, there was a need to investigate the case of a cat with clinical signs compatible with leishmaniasis. The feline, 2 years, domiciled neutered had already performed cytological exams and fungal culture, with a negative result for sporotrichosis. The tutors sought the Zoonosis Control Center, where the patient was sedated in a surgical environment. Skin fragments from lesions on the face and limbs were collected with a 9 mm punch (CEUA 3345231019). The samples were packed in 10% formaldehyde and processed at the Laboratory of Pathological Anatomy. The histopathology was positive for *Leishmania* sp., with amastigote forms being seen inside the macrophages. The result proves the occurrence of *Leishmania* sp. in domestic cats in areas endemic of Leishmaniasis. Investigations should be performed to demonstrate the importance of the cat in the maintenance of *Leishmania* sp. in urban environments. Therefore, a careful assessment of the role of domestic cats in the epidemiological cycle of leishmaniasis is necessary, since they can assume great importance as reservoirs and consequently cause risks to public health.

ISVS #08

EHRlichia spp. INFECTION WORSEN CARDIAC DAMAGE IN DOGS WITH CANINE LEISHMANIASIS

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Keywords: coinfection; heart; hemoparasitosis; Leishmania infantum chagasi.

In endemic areas for canine leishmaniasis (CanL), the occurrence of coinfection with other pathogens, such as *Ehrlichia* spp., has been associated with worsening of the clinical condition. Although rare, myocardial injury in dogs infected with *Leishmania infantum* and *Ehrlichia canis* has been described; but the severity of this damage on the heart of patients has not been determined. The present study aimed to evaluate the occurrence of histological changes in the myocardia of dogs naturally infected with *L. infantum* with or without coinfection with *Ehrlichia* spp. We evaluated paraffinized sections of 31 dogs affected by either *L. infantum* alone, or by both *L. infantum* and *Ehrlichia* spp, by comparing the region and degree of cardiac damage. The blocks were divided into two groups. Group 1 (G1) consisted from animals exclusively infected with *L. infantum*, while group 2 (G2) consisted of dog coinfecting with *L. infantum* and *Ehrlichia* spp. The right atrium free wall, right ventricle free wall, left ventricle, and interventricular septum of all groups were evaluated. Inflammatory infiltrate was the most common pattern found, and cardiac alterations were observed in 52/124 (41.93%) of the fragments evaluated. G2 had an incidence of myocardial injury with 32/52 (61.53%), while 20/72 (27.7%) of G1 showed histopathological alterations ($p < 0.05$). These findings confirmed that coinfection can potentiate cardiac damage in dogs, even in the absence of clinical signs of cardiac impairment.

ISVS #09

FURUNCULAR MYIASIS CAUSED BY *DERMATOBIA HOMINIS* IN FIVE CATS AND EFFICACY OF TREATMENT WITH TOPICAL FLURALANER

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Keywords: botfly; isoxazoline; feline myiasis

Dermatobia hominis is a botfly that causes furuncular myiasis. It is not as common in cats as in other species, and there are no reports of ectoparasiticide use for treatment. This article reports cases of furuncular myiasis caused by *D. hominis* in five naturally infested cats and the effectiveness of transdermal fluralaner for treatment. In Seropédica, Rio de Janeiro, five cats, aged between 3 and 12 years, one female and four males, were presented due to painful hyperemic, exudative, nodular lesions with a central orifice in which live moving larvae were visible. They were monitored by veterinarians for 48 hours. For treatment, 0.89 mL of Bravecto™ Topical Solution (MSD Animal Health) was administered by pipette, corresponding to the range of fluralaner doses (40-94 mg/kg per cat) recommended for the species. They were evaluated for periods of 12, 24 and 48 hours for larval mortality, determined by the absence of movement inside the wound. In three cats, the larvae died after 24 hours and in two after 48 hours. In two animals there was spontaneous expulsion of the larva after its death and in three it was necessary to perform manual compression for removal. The lesions improved after seven days. The removed larvae were analyzed under a stereomicroscope and morphological characteristics compatible with *D. hominis* larvae were observed. Topical fluralaner proved to be effective for the treatment of the parasitic disease.

ISVS #10

IDENTIFICATION OF CLINICAL MASTITIS PATHOGENS IN DAIRY COWS HOUSED IN A COMPOST BARN SYSTEM

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Keywords: microbiological isolation, mammary gland, milk

Isolation and identification of the etiological agents of bovine clinical mastitis (CM) enable rational treatment and adoption of preventive measures to avoid new intramammary infections. The aim of this study was to identify the mastitis-related pathogens in dairy cows, which were housed in a compost bedded pack barn. The work was conducted between March and August 2020 at a commercial dairy herd containing 490 lactating cows with average milk yield of 35Kg/day and cows were milked three times a day. One hundred and twenty milk samples from cows diagnosed with CM were collected and plated onto Accumast® plates. These plates were incubated at 37°C for 24 hours and interpreted according to the provided diagnosis orientation. From incubated plates, 52% (62/20) were culture negative. The most commonly isolated pathogens were *E. coli* (11%; 13/120), *S. aureus* and *S. agalactiae* (6%; 7/120), *Lactococcus*, *S. dysgalactiae*, coagulase negative *Staphylococci* (4%; 5/120), and *Klebsiella* spp. (3%; 4/120). Furthermore, *Enterococcus*, *S. uberis*, *Staphylococcus* spp. and yeasts were detected in a minor frequency. In the studied compost dairy barn, most cases yielded no bacterial growth, hence the use of antibiotics decreased. Of CM cases enrolled, *E. coli* was predominantly isolated, which allowed pathogen-focused prevention and control actions.

ISVS #11

IMPACT OF COVID-19 PANDEMIC IN CLINICAL ROUTINE OF THE SMALL ANIMAL PRACTITIONER

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Keywords: dogs, cats, pandemic, veterinary clinical practice

Social distancing, loss of family members and financial problems during the pandemic period resulted in negative effects on human mental health, which have been relieved by the presence of pet animals. Pet adoption, concerns regarding hygiene and doubts regarding the role of dogs and cats in coronavirus transmission resulted in increased demand of veterinary services. This study's goal was to collect data on changes on pet care as perceived by veterinary clinicians during the pandemic period. Data were obtained by a questionnaire consisting of closed questions with coded answers, sent to 58 cat and/or dog practitioners. Amongst the received answer, 71% of veterinarians report increase in number of consultations, these being mostly of adult dogs. The most common complaint involved gastroenteric symptoms, followed by dermatological ones. It is interesting to point out that animal-felt anxiety was observed by 52% of veterinarians and increase of animal body weight was pointed out by 42% of clinicians. 67% of small animal clinicians are optimistic regarding permanent changes after the pandemic, believing that the attachment established between guardian and animal will result in better care and greater demand for specialized services. It may be concluded that, despite economic impact and fears caused by the pandemic, attention to animal health and well-being will continue to be prioritized by pet owners.

ISVS #12

IN VITRO EFFICACY OF CINNAMALDEHYDE AGAINST *RHIPICEPHALUS SANGUINEUS* LARVAE AND NYMPHS

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Keywords: control, acaricide, prevention

The aim of this study was to evaluate the *in vitro* efficacy of cinnamaldehyde alone against larvae and nymphs of the tick *Rhipicephalus sanguineus*. The ticks utilized in this study came from colonies maintained in a laboratory and this study was approved by the ethics committee on the use of animals under protocol number 093/2014. For tests, cinnamaldehyde was diluted in a solution of olive oil and trichlorethylene in proportion of 1:3 and the concentrations obtained were 15000 to 2,500 $\mu\text{g.mL}^{-1}$ for the larvae and 50000 to 5000 $\mu\text{g.mL}^{-1}$ for the nymphs. Then, filter paper packets with 63.8 cm^2 area were impregnated with 0.670mL of each solution in concentrations of 330-55 $\mu\text{g.cm}^{-2}$ for larvae and concentrations of 1100-110 $\mu\text{g.cm}^{-2}$ for nymphs. All tests were performed in 6 replicates and the diluent of each test was used as a negative control. Statistical evaluation was performed using Probit analysis, with RStudio software to obtain the LC50 and LC90 values with confidence interval of 95%. Mortality assessment was performed after 24 hours. The mortality rates were considered to be satisfactory, at 98.4% for nymphs at 1100 $\mu\text{g.cm}^{-2}$ and 100% for larvae at 330 $\mu\text{g.cm}^{-2}$. The estimated LC50 and LC90 obtained for nymphs were 374 and 700 $\mu\text{g.cm}^{-2}$ while for larvae they were 57 and 121 $\mu\text{g.cm}^{-2}$ respectively. In conclusion, cinnamaldehyde was effective *in vitro* against larvae and nymphs of *R. sanguineus*.

ISVS #13

IN VITRO EFFICACY OF IVERMECTIN AGAINST *COCHLIOMYIA HOMINIVORAX* RESISTANT FIELD ISOLATE

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Keywords: Ivermectin, myiasis, *Cochliomyia hominivorax*, LC50, parasitism

Myiasis produced by *Cochliomyia hominivorax* negatively impacts animal welfare. Ivermectin (IVM) is widely used to prevent this parasitism, however its indiscriminate use can induce resistance. This study aimed to verify the in vitro efficacy of IVM (Sigma Aldrich) at 50; 5; 0.5; 0.05 e 0 mcg/mL on larvae of first (L1) second (L2) and third instar (L3) of an isolate of *C. hominivorax* known to be resistant to IVM (Laboratory colony kept at IZ-Nova Odessa-SP). The efficacies of IVM over L1, L2 and L3 were accessed separately, and for each concentration were used six replicates containing 20 larvae. The larvae were cultured in 5cm diameter perforated plastic plates containing culture medium (beef meat and blood powder, water, powdered egg and milk, formaldehyde and alcohol). IVM was previously solubilized/sonicated in alcohol/DMSO and added to the medium to reach the predetermined concentrations. Larvae were incubated 24 h in B.O.D. (37°C ≥ 40% humidity). Larvae of negative controls (without treatment) exhibited normal development. The efficacy values (based on mortality rate of larvae in relation to alive larvae) were used to calculate the lethal concentration (LC50) (SAS Probit). The LC50 for L1, L2 and L3 were 4.72mcg/mL, 3.49mcg/mL and 9.58mcg/mL respectively. IVM recommended dose for cattle is 200mcg/kg and after absorption the bioavailability in plasma/tissues reaches concentrations of nanograms/mL, which is significantly lower when compared to our in vitro results.

ISVS #14

INDISCRIMINATE USE OF MEDICATIONS ON ANIMALS BY GUARDIANS IN BREJO PARAIBANO, BRAZIL

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Keywords: Animal self-medication; Drugs; Vermifuge.

The use of medicines without veterinary prescription in pets is called animal self-medication. The purchase of medicines for veterinary use, whether in veterinary and human pharmacies or through family members and neighbors, is a very common practice and the health problems of animals resulting from this practice are potentially witnessed in the veterinary clinical routine. Given this, this research aimed to identify which are the main groups of drugs administered by responsible for pets in the region of the marsh of Paraíba, since data of this type are scarce. The data were collected and analyzed from 89 questionnaires applied and answered through the Google Forms® platform from October to November 2020. A considerable portion (32.9%) of those responsible has only one animal, with higher incidence of dogs (78.1%). 49.3% of those responsible have already medicated their animals on their own. Regarding the most used class of drugs, the use of anthelmintics (84.9%) was observed first, followed by multivitamins (61.6%) and analgesics (53.4%). It is necessary to elucidate this proposed theme more comprehensively in order to generate the perception of those responsible for pets about the possible damage to the animal's health in the context of indiscriminate self-medication in situations of incorrect medication that compromise health and well-being. being of the animal, since medicines, such as vermifuges, when used unnecessarily, can contribute to the development of resistance.

ISVS #15

INTEGRAÇÃO ARROZ X AVEIA E AZEVÉNS: DESEMPENHO FORRAGEIRO NA REGIÃO DO PAMPA

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Keywords: azevém; aveia; arroz; integração

Na produção agropecuária, a integração entre sistemas de produção de grãos e pastagens contribui com a sustentabilidade devido aos benefícios proporcionados pela forrageira e em caso de pastejo pela presença do animal. Ainda existem dúvidas sobre a melhor espécie forrageira para ser incluída em sistemas integrados com a cultura do arroz. Assim, sob delineamento em blocos casualizados, estudou-se três sistemas de integração, com Aveia Taura (AT), Azevém ou Aveia Ucraniana (AU) em sucessão à lavoura de arroz, em três ciclos de crescimento forrageiro. A produção de MS da AU no terceiro ciclo foi 22% superior à do primeiro ciclo. A produção de MS da AT foi 59% maior que a do azevém, sendo esta de ciclo mais curto quando comparada ao azevém. As aveias taura e ucraniana apresentaram maiores produções de MS que o azevém.

ISVS #16

LARVICIDAL EFFECT OF ENTOMOPATHOGENIC FUNGI DRY CONIDIA AGAINST *Aedes Aegypti* LARVAE

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Keywords: dry conidia, entomopathogenic fungi, Aedes aegypti

Several papers have demonstrated entomopathogenic fungi (EPF) potential to control mosquitoes of public health concern. Here, the effect of EPF dry conidia against *Aedes aegypti* larvae was assessed. Twenty millilitres of *Metarhizium anisopliae* CG 153 or *Beauveria bassiana* CG479 isolates at 1×10^8 con/mL were inoculated in rice and maintained under controlled conditions (RH \pm 80%; 28°C). After 21 days the conidia were removed from the rice. Cohorts of ten larvae (L2) (N=30) were immersed in plastic cups containing 40 mL of sterile water. The conidia powder of each isolate was applied over the water surface (i.e., dry conidia). A previous test was conducted to determine the required conidia's weight of each isolate to reach concentrations. Thus, each group was exposed to isolates at 1×10^5 , 10^6 or 10^7 con/mL or sterile tap water as control group (CTR). The larval survival were analysed for seven days and dead larvae were removed daily. The experiments were conducted twice. Kaplan-meier was used to obtain the survival curve, and the median survival time (S50) was assessed by log-rank test. As preliminary results, *M. anisopliae* CG 153 and *B. bassiana* CG479 reduced significantly ($\chi^2=143.4$; df=3; P<0.0001, and $\chi^2=94.32$; df=3; P<0.0001, respectively) the larval survival in comparison to CTR. The S50 of larvae exposed to both isolates ranged from 2 to higher than 7 days. Dry conidia of both isolates obtained meaningful results in controlling larvae, however, future tests need to be conducted.

ISVS #17

MOLECULAR CHARACTERIZATION AND GENETIC DIVERSITY OF *ACINETOBACTER BAUMANNII* ISOLATES OF ANIMAL ENVIRONMENT

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Keywords: Molecular Typing, A. baumannii, Veterinary Medicine

The genus *Acinetobacter* comprises 65 different species with distinct names and 16 effectively published but not valid named species. *Acinetobacter* species have emerged as one of the most clinically important pathogens and most studies consider *A. baumannii* as the main species causing human and veterinary nosocomial infections with high mortality considering its multidrug-resistant pattern. For this study, a total of 91 non-fermenting and oxidase-negative strains of Gram-negative coccobacilli from animal samples (infections of urinary tract, ear canal and skin) was characterized by MALDI-TOF proteomic technique and confirmed by PCR, considering the presence of the genes: *recA* (*Acinetobacter* spp./ 425pb), *gyrB* (*A. baumannii* / 294 bp) and the gene for carbapenemase serine beta-lactamases, *blaOXA-51* (639 bp). *A. baumannii* species were submitted to Pulsed Field Gel Electrophoresis (PFGE) to epidemiological analysis. Eight *Acinetobacter baumannii* was identified and was possible to type by PFGE technique six of them. The PFGE analysis revealed an extensive genetic heterogeneity but was also possible to observe that two isolates presented 85% of similarity, suggesting a clonal association. There are few reports indicating the presence of similar or even identical successful clones both in humans and animals and considering that data about *A. baumannii* of animal origin are still scarce more studies are necessary to clarify the role of population dynamics and clones of these isolates.

ISVS #18

PARASITES INVESTIGATION IN VEGETABLES FROM COMMUNITY VEGETABLES

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Keywords: Faust; Hoffmann; Verduras; Willis.

Vegetables comprise all vegetables grown in vegetable gardens and their consumption is closely linked to the prevention of chronic diseases and a healthier diet. Cultivation can facilitate parasite contamination in vegetable gardens that do not have adequate hygienic-sanitary conditions. The present study aimed to evaluate community gardens in the city of Londrina, Paraná, to investigate factors associated with parasitological contamination during the production chain of these vegetables. Eight community gardens were visited, in which 18 samples of vegetables were collected, being 12 lettuces, 4 cabbages, 1 chicory and 1 almond. The samples were processed by the techniques of Faust, Hoffman and Willis. Among the results obtained, the type of fertilization found was mainly organic, from chicken, horse, ruminant manure, leaves and food. Regarding water, the type of irrigation was mostly manual and the percentage of gardens with water from public supply was 37.5%, protected mine 25.0% and unprotected mine 37.5%. With regard to animals present in the garden, 37.5% of the gardens had the presence of domestic animals, ranging from chickens, geese, coatis, dogs and cats. Of the 18 samples analyzed, 27.8% were positive, 40.0% of these were cabbage, 40.0% were lettuce and 20.0% almond. This study demonstrates that there is contamination of vegetables by parasites, which may be related to water quality, type of fertilizer, or type of cultivation.

ISVS #19

PREVALENCE OF *GIARDIA INTESTINALIS* AND PARASITISM ASSOCIATED WITH THE FECAL CONSISTENCY OF NATURALLY INFECTED CATS IN SEROPÉDICA, RJ

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Keywords: domestic feline, giardiasis, diagnosis.

The protozoan *Giardia intestinalis* is a cosmopolitan parasite having a variety of hosts, including the domestic cat (*Felis catus*), and is important due to its high zoonotic potential. In this context, the present study evaluated the prevalence of *G. intestinalis* in fecal samples from domestic cats in the city of Seropédica, Rio de Janeiro. The study was developed with samples from the LQEPV parasitological diagnosis routine to evaluate the presence of the parasite by the IDEXX SNAP® *Giardia* coproantigen test. Stool consistency was observed and categorized as dry, normal or diarrheal stools. The number of positive or negative samples was recorded. Significance was determined by the chi-square test or the G test, at 5% statistical significance. Of 105 samples evaluated, 21 were positive, or a prevalence of 20%. Among the positive samples, 13 (61.9%) were normal feces and 8 (38.1%) were diarrheal, with no dry stools from positive animals. There was a significant difference between the stool consistency ($p = 0.032$), whereas animals that presented feces with normal to diarrheal consistency were more likely to be positive. This was due to the fact that many of them were asymptomatic, having low release of cysts in the feces and causing negative coproparasitological results. In conclusion, *G. intestinalis* was shown to be prevalent among cats in Seropédica - RJ with many cats being asymptomatic.

ISVS #20

RELATIONSHIP BETWEEN CONTEMPORARY TECHNOLOGY AND DISTANCE EDUCATION ON EQUINE REPRODUCTION

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Keywords: equine reproduction, learning, social media

The technologies used in postmodern society promote a greater use of resources, which are represented, on a large scale, by social networks. Thus, the extreme importance of these as a tool that provides knowledge in the educational context is emphasized. In this sense, the inclusion of the most diverse contents in the virtual context stands out, including the area of equine reproduction, that shows an extreme growth in the world scenario, being responsible for the movement of several industrial branches, mainly with regard to the mechanisms of genetic development. Thus, the group HISTOREP (Teaching, Research and Extension Group on Equine Reproduction - UFPel) started to use social networks, such as Facebook and Instagram, as a way to spread information on subjects related to the field of equine reproduction. We analysed the reach of the Instagram profile during the last year. It was observed that there were 71,471 impressions, reaching 173,659 people. The number of comments on publications was 384, while there were 2,124 shares. The total number of likes was 22,030 and the number of interactions with publications was 29,832. In this way, we concluded that the use of social media was very important and positive for us to continue to spread information about equine reproduction in times of pandemic, through publications, stories and quiz questions, reaching people from other states and countries, in addition to a great growth in views and interactions.

ISVS #21

RICE X TAURA OAT INTEGRATION: PASTURE PERFORMANCE UNDER LEVELS OF NITROGEN

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Keywords: Nitrogen; Taura oat; fertilization; rice;

Nitrogen (N) potentialize pasture dry matter (DM) yield, particularly grass, leading to a more efficient production system. Thus, a randomized block design was performed to evaluate the effect of levels of N fertilization (0, 50, 100 and 150 kg ha⁻¹) on Taura oat dry matter (DM) yield in three cycles (1st, 2nd and 3rd) following rice cultivation. It was observed DM yield increments of 10.3, 13.6 and 3.4kg ha⁻¹ for each kg of N applied, in the 1st, 2nd and 3rd cycles, respectively. With fertilization, it was obtained production increments of 61, 129 and 144% for 50, 100 and 150 kg of N ha⁻¹, respectively, in the 1st cycle. For the same levels, it was obtained increments of 136, 147 and 178% in the 2nd cycle. In the absence of N fertilization, no production differences were observed among cycles, where the average DM yield was 1,009 kg ha⁻¹. The greatest DM yield for 50, 100 and 150 kg of N ha⁻¹ were obtained in the 2nd cycle, reaching 2,937, 3,080 and 3,468 kg ha⁻¹, respectively. Total DM yield were 3,026, 5,787, 6379, and 7391 kg ha⁻¹ in the three cycles studied. Productivity gains were 91, 111 and 144% for 50, 100 and 150 Kg of N ha⁻¹ compared with fertilization absence. Nitrogen fertilization increases Taura oat pasture production and the level indicated is 150 kg ha⁻¹ to raise productivity and improve the integrated system.

ISVS #22

RYEGRASS PERFORMANCE UNDER DIFFERENT NITROGEN LEVELS IN INTEGRATION WITH RICE FARMING

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Keywords: integration, rice, ryegrass and nitrogen

The environmental impact of rice farming is associated to the intensive use of water and other resources. However, integrated rice-pasture cultivation under a pivot irrigation system can lead to a more sustainable production. Nitrogen (N) fertilization increases forage dry matter (DM) yield, thus this effect was studied in a randomized block design with four N levels (0, 50, 100 and 150 kg of N ha⁻¹) in three cycles (1st, 2nd and 3rd) following rice cultivation. In the regression, there was an increasing linear response to fertilization in all cycles with production increments of 4,863, 7,198 and 11,084 kg of DM ha⁻¹ for each kg of N used in the 1st, 2nd, and 3rd cycles, respectively. Except for 50 kg of N ha⁻¹, forage production was greater in the 3rd cycle for all the other N levels, since ryegrass has its potential maximized from October onwards in the studied region. In the 1st cycle, production was 60, 169 and 243% greater with 50, 100 and 150 kg of N ha⁻¹ compared with N absence, whereas in the 2nd cycle, the increments were 56, 153 and 223%, respectively. The forage DM yield had expressive increments (155 and 166%) for 100 and 150 kg of N ha⁻¹, respectively, therefore 50 kg of N ha⁻¹ was not sufficient to increase ryegrass production. Nitrogen application is capable of maximizing forage DM yield, allowing livestock to graze earlier and extending the grazing period within 30 days.

ISVS #23

THE EFFECT OF DIFFERENT UV-B DOSES IN THE GERMINATION OF A NATIVE *METARHIZIUM* ISOLATE

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Keywords: UV-B, fungi, biological control

Metarhizium spp. are entomopathogenic fungi that can be used to biologically control several arthropod species, including insects and ticks. The effects of solar ultraviolet radiation (UV) can damage the fungus, leading to DNA damage, mutations, and death. The objective of this study was to analyze the conidial relative germination (RG) of a Brazilian native *Metarhizium* sp. isolate after exposure to different doses of artificial UV-B light. Conidia of LCM S10 were exposed to 4, 6, and 7kJ/m² and germination was evaluated after 24h and 48 h. Data were analyzed using analysis of variance (ANOVA), followed by the Tukey test. As expected, the higher the dose the bigger is the damage. 24h after exposure, average RG of conidia exposed to 4, 6, and 7kJ/m² were 25.3, 16.1, and 4.0 respectively. RG of conidia exposed to 6 and 7 kJ/m² were statistically similar, but different when the dose of 4 was compared to 7 kJ/m². 48h after exposure, conidial RG was statistically higher regardless the dose, suggesting this isolate has a good recovery rate. Average RG 48h after exposure of 4, 6, and 7kJ/m² were 91.5, 87.6, and 53.1. Conidial RG of 4 and 6kJ/m² were statistically similar, but different when these doses were compared to 7kJ/m². Brazil has a high potential for biodiversity and explore the UV-B tolerance of native biological control agents is an important step in the selection of isolates for field trials.

ISVS #24

THE LARVICIDAL EFFECT OF ENTOMOPATHOGENIC FUNGUS *BEAUVERIA* SP. AGAINST *AEDES AEGYPTI*

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Keywords: Aedes aegypti; entomopathogenic fungi; biological control

Entomopathogenic fungi (EPF) have demonstrated potential to control mosquitoes of public health concern. Here, for the first time, the larvicidal effect of EPF isolated from the soil, *Beauveria* sp. LCMS19 isolate against *A. aegypti* larvae was investigated. Three cohorts of ten larvae (N=30) were exposed to a screening (104–108 con/mL) of EPF solutions. The control groups (CTR) were exposed to Tween 80. All experiments were conducted under controlled conditions (RH=80%; 28°C), and the survival was assessed daily up to 7 days, the number of surviving larvae was noted and dead larvae were separated. The experiments were conducted twice using different batches of larvae and EPF. Kaplan-Meier and Log-rank test were used to obtain and compare the survival curve and median survival time (S50). As preliminary results, EPF at 108 and 107 con/mL reduced significantly ($\chi^2=111.7$; df=2; $P<0.0001$) the larval survival in comparison to CTR. The survival curve of larvae exposed to EPF at 105 con/mL was reduced significantly ($\chi^2=5.067$; df=1; $P=0.0244$) in comparison to CTR, however, 106 and 104 con/mL had no significant difference ($\chi^2=0.2988$; df=2; $P=0.8612$) to reduce the larval survival in comparison to CTR. In general, the survival rate ranged from 0% to 15%, and S50 ranged from 3 to ND (i.e. higher than 7 days). *Beauveria* LCMS19 isolate had larvicidal effect *in vitro* against *A. aegypti* demonstrating the potential to reduce *Aedes* population.

ISVS #25

THE SEASONALITY OF SANDFLIES IN THE MUNICIPALITY OF SEROPÉDICA RIO DE JANEIRO, BRAZIL

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Keywords: Sandflies, Leishmania sp., seasonality, climatic factors.

Sandflies are the vectors of leishmaniasis and the main causes that influence the seasonality and distribution of these insects in the year are climatic factors. Therefore, this study analyzed the sand flies seasonality related to temperature, humidity and rainfall index data, collected in the municipality of Seropédica, Rio de Janeiro, for August 2016 to July 2018. The specimens were collected using a light CDC trap and identified using an identification key. Climatic data of temperature and humidity were collected using thermohygrometers and rainfall data were obtained from the national website of meteorology. The correlation of climatic data with the number of sand flies captured was performed using the Pearson coefficient. A total of 29,223 specimens were captured and the two main species identified were *Nyssomyia intermedia* (79,2 %) and *Migonemyia migonei* (20,8%). These species are considered the responsible for the transmission of American Cutaneous Leishmaniasis in Rio de Janeiro state. The correlation between the number of sandflies and temperature was positive and moderate ($r = 0,506$), between humidity was positive and not significant ($r = 0,280$) and between the rainfall was positive and moderate ($r = 0,647$). The correlation of climatic data with the number of sandflies and great importance for adopting more assertive control measures of these vectors in all periods of the year.

ISVS #26

TRANS-GERATIONAL IMMUNE PRIMING IN AEDES AEGYPTI EXPOSED TO *METARHIZIUM ANISOPLIAE*

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Keywords: Mosquitoes, biocontrol, insect, Metarhizium

Entomopathogenic fungi (EPF) are a promising tool against *Aedes*-borne diseases which poses a threat to the public health. However, repeated encounters with pathogens can stimulate the mosquito offspring protection, due to the parental immunological experience. This phenomenon is called trans-generational immune priming (TGIP). We assessed TGIP in three generations of *A. aegypti* exposed EPF. To determine the best fungal dose to stimulate TGIP, and obtaining offspring, larvae were exposed to screening of *M. anisopliae* ARSEF 2211 at 105–108 con/mL. Three generations of larvae were exposed to EPF at 107 to assess the survival and qPCR. RNA extraction, cDNA synthesis and qPCR were conducted in larvae (N=3) exposed to EPF, or 0.03% Tween 80 of each generation, and naïve group. The primers used were: cecropin, defensin, lysozyme, cathepsin. The fold change levels were normalized using the RSP7 gene and comparing to naïve group. P-values were calculated using Kruskal-Wallis followed by Mann-Whitney test. Kaplan-Meier and Log-rank test were used to obtain and compare the survival curves. Here, 107 was the best dose against larvae. The 2nd generation of larvae was more susceptible to EPF. There was no consistent difference (P>0.999) in relative expression of genes that suggesting TGIP in mosquito offspring exposed to EPF. Here, we gave new insights on bioprospecting strategies demonstrating the potential of *M. anisopliae* to control larvae without stimulating TGIP in mosquito offspring.

ISVS #27

UKRAINIAN OAT UNDER DIFFERENT LEVELS OF N IN INTEGRATION WITH RICE FARMING: FORAGE PRODUCTION

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Keywords: forage production; nitrogen fertilization; integrated systems

Integrated systems of grain and forage cultivation are more sustainable, and it can be potentialized by nitrogen (N) fertilization. This study assessed the effect of four levels of N fertilization (0, 50, 100 and 150 kg ha⁻¹) on Ukrainian oat dry matter (DM) yield, performed in three cycles (1st, 2nd and 3rd). Difference among cycles was observed only for 150 Kg of N ha⁻¹, where the DM production was greater in the 2nd and 3rd cycles (2,125 and 2,112 Kg ha⁻¹, respectively). Therefore, the forage long cycle was confirmed in the studied conditions. In the regression, there was a quadratic effect in the 1st cycle and a linear effect in the 2nd and 3rd cycles. In the 1st, there was an increase in forage DM yield until 96 kg of N ha⁻¹, suggesting that portioning is the best fertilization strategy. In the 2nd and 3rd, there was an increment of 9.203 and 7.919 kg of DM ha⁻¹ for each Kg of N applied and 24.700 kg for the total production. In the 1st, 50, 100 and 150 Kg of N ha⁻¹ induced a forage DM yield increment of 65, 114 and 65%, respectively. In the 2nd, forage DM yield increments were 84, 133 and 200% and 91, 113 and 143% in the 3rd cycle. There was an increment of 80, 116 and 143% in the total forage DM yield for 50, 100 and 150 kg of N ha⁻¹, respectively. The N fertilization enhances the Ukrainian oat production, however the maximum amount that should be applied is 96 kg of N ha⁻¹.

ISVS #28

HELMINTHS IN THE URBAN PERIMETER OF SEROPÉDICA, RIO DE JANEIRO

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Keywords: Taxonomy, Ecology and Collection

Angiostrongylus cantonensis is a nematode that causes eosinophilic meningitis. The synanthropic rodent *Rattus rattus* is the main definitive host for this parasite in Brazil. The gastropod snail *Achatina fulica* is the intermediate host and become infected by ingesting larvae in the first stage of the nematode. The aim of this study was to identify larvae and adults of *A. cantonensis* in the municipality of Seropédica. In January 2020, 6 *A. fulica* and 9 *R. rattus* were collected. While snails had the cephalopodal mass fragmented and digested for recovery of L3, rodents were anesthetized, euthanized and necropsied. Two *A. fulica* were infected with larvae of the Angiostrongylidae family. Its morphological characteristics suggest they belong to the species *A. cantonensis*. In 7 *R. rattus*, 57 nematodes were found, 2 specimens belonging to the genus *Heterakis* and 55 to the genus *Syphacia*. In addition, no *A. cantonensis* was found in *R. rattus*. There is little knowledge about the occurrence of *A. cantonensis* in the state of Rio de Janeiro, especially in Seropédica. Observing the results obtained, *A. fulica* naturally infected by angiostrongylids represents a risk to public health, the presence of definitive and intermediate hosts of *A. cantonensis* show this parasite can maintain the life cycle in this area. Moreover, the occurrence of the genera *Syphacia* sp., which also has zoonotic potential, shows us the parasitological diversity and the importance of rodents to public health.