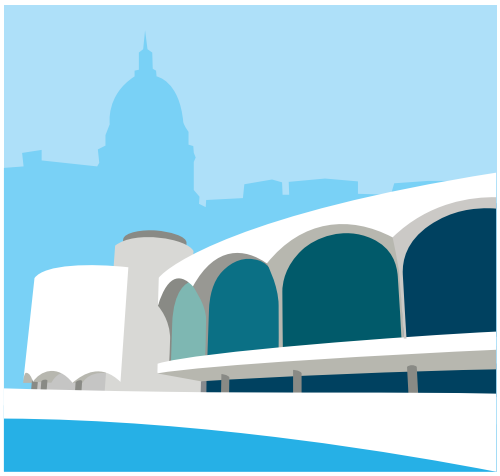


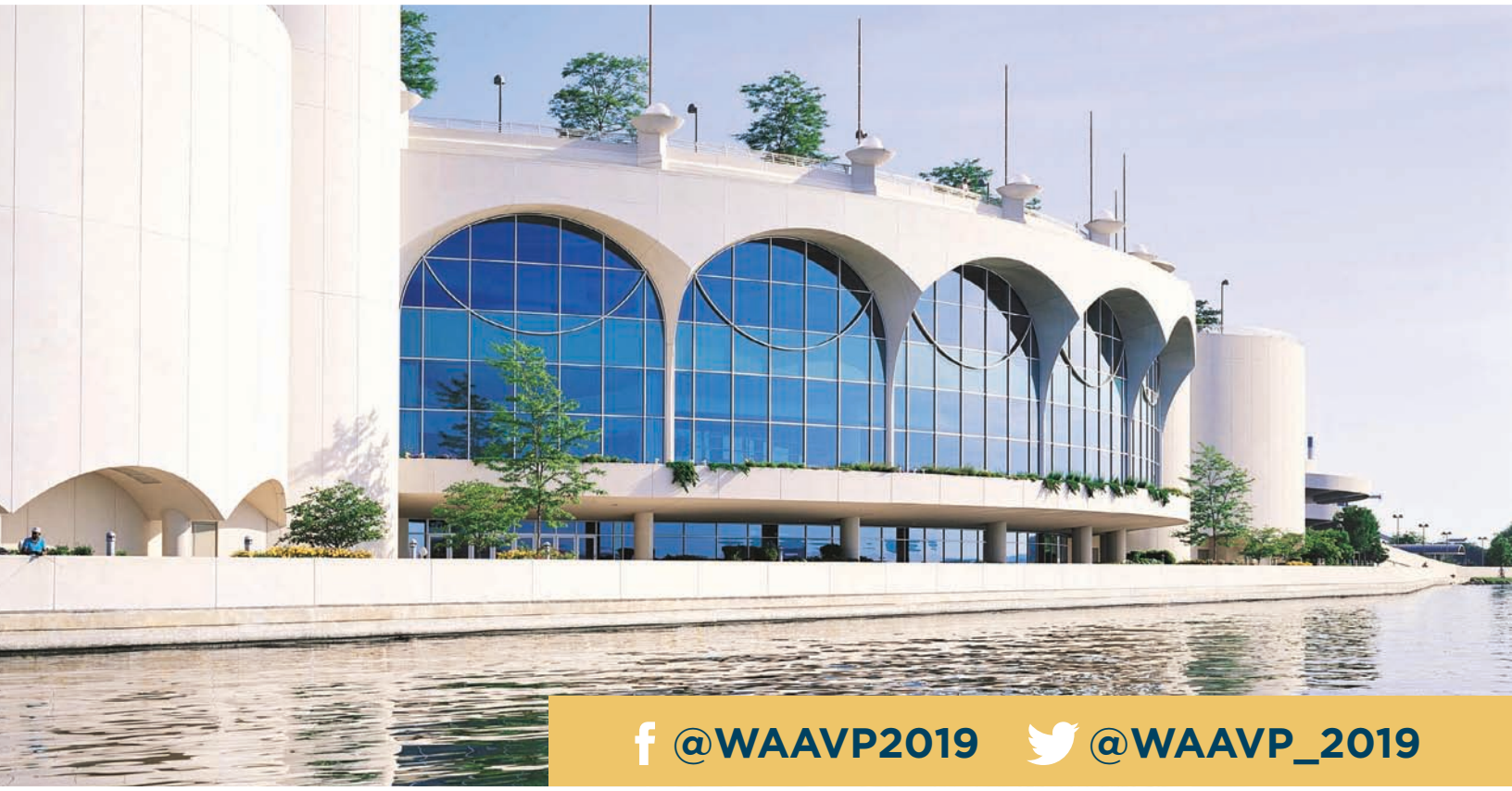
WAAVP

27th Conference of the World Association for the Advancement of Veterinary Parasitology

JULY 7 – 11, 2019 | MADISON, WI, USA

Dedicated to the legacy of Professor Arlie C. Todd

Sifting and Winnowing the Evidence in Veterinary Parasitology



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Abstract Book

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gene. The pipeline retrieves sequences from NCBI annotated with the provided marker, identifies the correct region using a hidden markov model (using barrnap, https://github.com/tseemann/barrnap) or covariance model (using infernal) and formats them for common pipelines like RDP, dada2 and mothur. This pipeline provides speed and flexibility beyond what is available in public databases. markerDB is available at https://github.com/ucvm/markerDB.

PS03.75 Evaluation of the Preventive Efficacy of a Permethrin-Fipronil Based Spot-On (Effitix® Spot-On) for Canine Leishmnaniosis and Dirofilariosis in a Highly Endemic Area in Greece: An Open Field Trial

Dr. Elias Papadopoulos[1], Dr. Olga Karteri[2], **Dr. Vanessa Chala**[3], Dr. Christelle Navarro[3]
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Canine dirofilariosis (Dirofilaria immitis) and leishmaniosis (Leishmania genus) are two vector borne diseases, occurring worldwide including now in northern countries(1)(2). Therefore affordable and efficient options are needed to struggle against reservoirs carriage, to protect both animals and humans health. Thirty privately owned dogs, living outdoor, in a highly endemic area of northern Greece (Serres), were recruited. In clinic diagnostic tests (Speed LeishK /Diro, Virbac BVT, La Seyne sur Mer, FRANCE) were used to screen and exclude positive carriers (detection of anti leishmania's kinesin antibodies and antigens from adult filaria) before enrollment. Each dog was treated with Effitix® (Permethrin 44.88% - Fipronil 6.01%) following manufacturer recommendations, at inclusion time, then on a monthly base, over 18 months (from June 2017 to November 2018). Dogs were monthly blood sampled to follow their status.

Amoung the 30 dogs, one accidently died, two were found to be dirofilariosis positive (in August and September respectively: which implied a contamination prior to enrollment), three additional leishmaniosis infected dogs were removed from the study; all were excluded accordingly from the analysis regarding Dirofilariosis. At the end of the study 22 out of 24 dogs remained clinically healthy with negative testing, giving a protection of 91.7% against Dirofilariosis. Regarding leishmaniosis, the 4 dirofilariosis infected dogs as well as the car accident were removed from the calculations; at the end of the study, 22 of them remained negative, giving an 88% protection against leishmaniosis.

Those encouraging results show Effitix®spot-on can be one efficient option to prevent Dirofilariosis and Leishmanisosis transmissions; results would need to be confirmed on larger scale with a control population.

PS03.76 Evolution of the Efficacy of a Combined Moxidectin-Levamisole Treatment Against Resistant Gastrointestinal Nematodes in Lambs

Lic. Sonia Luque[1], Dr. Mercedes Lloberas[2], MV Patricia Cardozo[2], Prof. Carlos Lanusse[1], Prof. Guillermo Virkel[1], Lic. Cristina Farias[1], MV Paula Viviani[1], Prof. Adrian Lifschitz[1], **Dr. Luis Alvarez**[1]
[1]Centro de Investigación Veterinaria de Tandil (CIVETAN), UNCPBA-CICPBA-CONICET, Tandil, Argentina, [2]Instituto Nacional de Tecnología Agropecuaria (INTA), Balcarce, Argentina

Nematodicidal combinations can be a valid strategy to achieve effective nematode control in the presence of drug resistance. The aim of the current trial was to evaluate the pharmaco-parasitological outcome after the continuous use of moxidectin (MXD) and levamisole (LEV) as a combined treatment in lambs naturally parasitized with ivermectin-resistant gastrointestinal nematodes. Forty (40) lambs were divided into four groups (n=10): untreated control and subcutaneously treated with either MXD (0.2 mg/kg), LEV (8 mg/kg) or with MXD+LEV (0.2 and 8 mg/kg, respectively). Blood samples were collected at different times up to 1 (LEV) or 14 (MXD) days post-treatment. LEV and MXD plasma concentrations were measured by HPLC. Faecal samples were collected on days 0, 7, and 14 post-treatment to perform the

faecal egg count reduction tests (FECRT). No significant pharmacokinetic (PK) adverse changes were observed for either MXD or LEV after their co-administration in sheep. The clinical efficacy of the MXD+LEV combination was evaluated after its continuous use (3 treatments/year) over five (5) years at the same farm. The initial anthelmintic efficacies (1st year) were 99% (MXD), 85% (LEV) and 100% (MXD+LEV). Following repeated annual treatments over five years, the clinical response for the combined treatment reached 87% efficacy. The combination reached efficacies of 100% (1st year) and 98.5% (5th year) against Haemonchus contortus. Teladorsagia spp. and Trichostrongylus spp. were the main nematode genera surviving the individual and combined treatments. The co-administration of MXD+LEV during five years resulted in a significant higher anthelmintic effect compared to MXD or LEV given alone. Even when MXD and LEV individual efficacies were reduced during the five-year period, the combined treatment maintains acceptable efficacy levels against H. contortus.

PS03.77 Polymorphisms in the Acetylcholinesterase 3 Gene in Cattle Fever Ticks (Rhipicephalus Microplus), Isolates from Uruguay and Southern Brazil

Br. Florencia Bariani[1], Dr. Guilherme M. Klafke[2], **Dr. Eleonor Castro-Janer**[1]
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The objective of this study was to identify mutations in acetylcholinesterase 3 gene (BmAchE3) of cattle fever ticks (CFT - Rhipicephalus microplus) previously associated with resistance to organophosphates (OP) in field isolates of CFT obtained in Uruguay and Rio Grande do Sul state, Southern Brazil. CFT populations (n=24) were submitted to the larval packet test with ethion in order to characterize phenotypic resistance. To identify nucleotide polymorphisms in BmAchE3, we amplified and sequenced a segment of 308 bp where three mutations (I48L, I54V and R86Q) were found in OP-resistant ticks. In total, the genomic DNA of 134 individuals from susceptible and resistant populations were analyzed. The I54V mutation was found in 133 individuals, the R86Q in 131 and the I48L in 44 individuals. In all ticks that survived ethion exposure, mutations I54V and R86Q were detected. The I54V was found in only 20% of ethion-treated survivors. Both resistant and susceptible ticks presented any of these three mutations, including ticks form a susceptible reference strain (100% with I54V/R86Q). The results obtained in the present study disagree with previous published data associating these mutations with OP resistance in CFT. Mutations in other acetylcholinesterase genes (BmAchE1 and 2) and metabolic detoxification may also contribute with OP resistance in this tick species.

PS03.78 Anthelmintic Resistance and Common Worm Control Practices in Sheep Farms in Belgium

Prof. Edwin Claerebout[1], Ms. Nathalie De Wilde[1], Mrs. Eva Van Mael[2], Mr. Stijn Casaert[1], Dr. Fiona Vande Velde[1], Dr. Florian Roeber[3], Ms. Pamela Vinueza Veloz[1], Prof. Bruno Levecke[1], Prof. Peter Geldhof[1]
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In contrast to many other European countries, no data were available on the presence of anthelmintic resistance in gastrointestinal nematodes in sheep in Belgium. A faecal egg count reduction test was performed in 26 sheep farms (29 flocks) in Flanders, Northern Belgium. Results indicated widespread resistance against benzimidazoles (albendazole, fenbendazole and mebendazole), with treatment failure (FECR < 95 %) in all 8 flocks investigated. Haemonchus contortus and Teladorsagia circumcincta were the predominant species after treatment failure. Amino acid substitutions associated with benzimidazole resistance were detected at the codon positions 167 (8%) and 200 (92%) of the isotype-1 beta tubulin gene in H. contortus, codon positions 198 (47%) and 200 (43%) in T. circumcincta and position 200 (100%) in T. colubriformis. Resistance against