



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

*Joint meeting with the 64th American Association of Veterinary Parasitologists
Annual Meeting & the 63rd Annual Livestock Insect Workers Conference*

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Table of Contents

Keynote Presentation

- 4** Keynote Presentation Demystifying One Health: Sifting and Winnowing the Role of Veterinary Parasitology

Plenary Lectures

- 6-7** **PL1.0** Evolving Approaches to Drug Discovery
- 8-9** **PL2.0** Genes and Genomics in Parasite Control
- 10-11** **PL3.0** Leishmaniasis, Leishvet and One Health
- 12-13** **PL4.0** Veterinary Entomology: Outbreak and Advancements

Oral Sessions

- 15-18** **OA01** Canine Heartworm I
- 18-21** **OA02** Diagnosis and Decision Support for GI Nematodes in Ruminants I
- 21-24** **OA03** North American Ticks
- 25-28** **OA04** Coccidia
- 28-30** **OA05** Worldwide Vector-Borne Infections in Companion Animals
- 30-35** **OA06** Canine Heartworm II
- 35-38** **OA07** Host Responses Against Helminths in Ruminants
- 39-42** **OA08** Tick Disease Transmission
- 43-46** **OA09** Wildlife Parasites
- 46-49** **OA10** New Tools and Big Data for Evaluating Intestinal Parasite Infections in Companion Animals
- 50-52** **OA11** Canine Protozoa
- 53-56** **OA12** Diagnosis and Decision Support for GI Nematodes in Ruminants II
- 56-59** **OA13** Flea and Tick Treatment
- 60-62** **OA14** Protozoan Parasites
- 62-65** **OA15** Education
- 65-68** **OA16** Canine Helminths
- 68-71** **OA17** Molecular Tools I
- 71-74** **OA18** Leishmania
- 74-78** **OA19** Nematode Molecular Tools, Resistance I
- 78-80** **OA20** IAFWP Symposium
- 80-84** **OA21** Cat Parasitisms

- 84-89** **OA22** Molecular Tools II
- 89-92** **OA23** Leishmania
- 92-97** **OA24** Nematode Molecular Tools, Resistance II
- 97-101** **OA25** IAFWP Symposium
- 101-104** **OA26** Canine Helminths II
- 104-108** **OA27** Epidemiology
- 108-111** **OA28** Alternative Treatments for Parasites in Ruminants I
- 111-113** **OA29** Unusual Protozoa
- 114-116** **OA30** IAFWP Symposium
- 116-118** **OA31** Anthelmintic Resistance in Ruminants
- 119-122** **OA32** Avian Parasites
- 122-125** **OA33** Equine Cyathostomes I
- 125-128** **OA34** Flies and Fly Control in Ruminants
- 128-131** **OA35** Ruminant Trematodes I
- 131-135** **OA36** Treatment and Control of GI Nematodes in Ruminants
- 136-139** **OA37** Poultry Coccidia, Aquatic Infections
- 139-144** **OA38** Equine Cyathostomes II
- 144-148** **OA39** Insecticide and Acaricide Resistance in Ruminants
- 149-152** **OA40** Zoonoses
- 153-155** **OA41** Biology and Pathology of GI Nematodes in Ruminants
- 155-158** **OA42** Diagnostic Techniques
- 159-161** **OA43** Equine Parasites
- 161-164** **OA44** Canine Arthropods
- 164-167** **OA45** Ruminant Trematodes II
- 168-171** **OA46** Gastrointestinal Protozoa in Ruminants
- 171-175** **OA47** Wildlife Helminths
- 175-179** **OA48** Equine Ascarids
- 179-183** **OA49** Ticks on Cattle
- 183-187** **OA50** Alternative treatments for Parasites in Ruminants II

Poster Sessions

- 189-234** **PS01** Poster Session 1
- 234-280** **PS02** Poster Session 2
- 280-326** **PS03** Poster Session 3



ORAL SESSIONS

October 21 in 2017 (n=53,540 flies) and May 23 to October 3 in 2018 (n=42,585). In 2017, stable flies were first trapped on June 17 and population distribution was unimodal with the highest population recorded between July 14-27. In 2018, stable flies were first captured on June 6 and population distribution was bimodal with peaks in July 24-August 2 and August 30-September 6. The sex ratio was determined and used to uncover any trap biases. Females removed from sticky traps were dissected to determine ovarian development (stage 0-4, nulliparous and uniparous), which was used to determine changes in the population age structure throughout the season. Relationships between adult stable fly abundance as functions of environmental conditions over time were analyzed using multiple linear regression models and ANOVA F-tests, revealing relative humidity, maximum air temperature, or soil temperature to be the best predictors of fly abundance, but the parameters changed between years. Very few studies on stable fly biology have occurred in in Manitoba. Knowledge of stable fly population dynamics provides critical information on the timing of life events linked to environmental conditions, and can aid in predicting outbreak patterns and lead to strategic management plans.

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The increasing widespread development of drug resistance in the liver fluke *Fasciola hepatica* has motivated the need for alternative diagnostic tools. The work reported here describes the validation of an egg hatch test (EHT) as an in vitro technique to detect albendazole (ABZ) resistance in *F. hepatica*. The validation includes the intra-assay, inter-assay and intra-herd variations, and the comparison of results obtained after performing the EHT and a controlled efficacy test. Additionally, the development of the protocol included the adjustment of different critical factors to improve the simplicity of the assay. The greatest uniformity between results within the assay and over time until 8 weeks after gallbladder eggs collection (the deadline proposed for egg analysis), was obtained after incubation with an ABZ concentration of 0.5 µM. The length of exposure to ABZ was shown to be critical, as prolonged (15 days) ABZ incubation led to a reversal of drug resistance. There was a close agreement between the outcome of the EHT and that obtained for the in vivo assays. Moreover, the same level of resistance was observed when eggs and faeces were collected from animals of four (4) different farms and analyzed with both the EHT and the faecal egg count reduction test. A 0.5 µM drug level is confirmed as the discriminating concentration to predict ABZ resistance by the EHT in *F. hepatica*.

OA35 Ruminant Trematodes I

July 10, 2019, 11:00 - 12:30

Breakout Room 5, Meeting Rooms KLOP, Level 4

OA35.01 Diagnosis of Albendazole Resistance in *Fasciola Hepatica*

Dr. Luis Alvarez¹, Dr. Laura Ceballos¹, Dr. Candela Canton¹, Dr. Cesar Pruzzo², Dr. Rodrigo Sanabria³, Dr. Laura Moreno¹, Dr. Jaime Sanchis⁴, Prof. Pedro Ortiz⁵, Prof. Ian Fairweather⁶, Prof. Carlos Lanusse¹, Dr. Maria Martinez Valladares⁷

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OA35.02 On Farm Risk Mapping of Liver Fluke (*Fasciola Hepatica*): Current Evidence and Future Directions

Dominique Maree Marendy^{1,2}, Derek Schneider¹, Dr. Lillian Mukandiwa¹, Dr Tommy L.F. Leung¹, Dr. Leslie Gabor², Dr. Emma K Doyle¹

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