

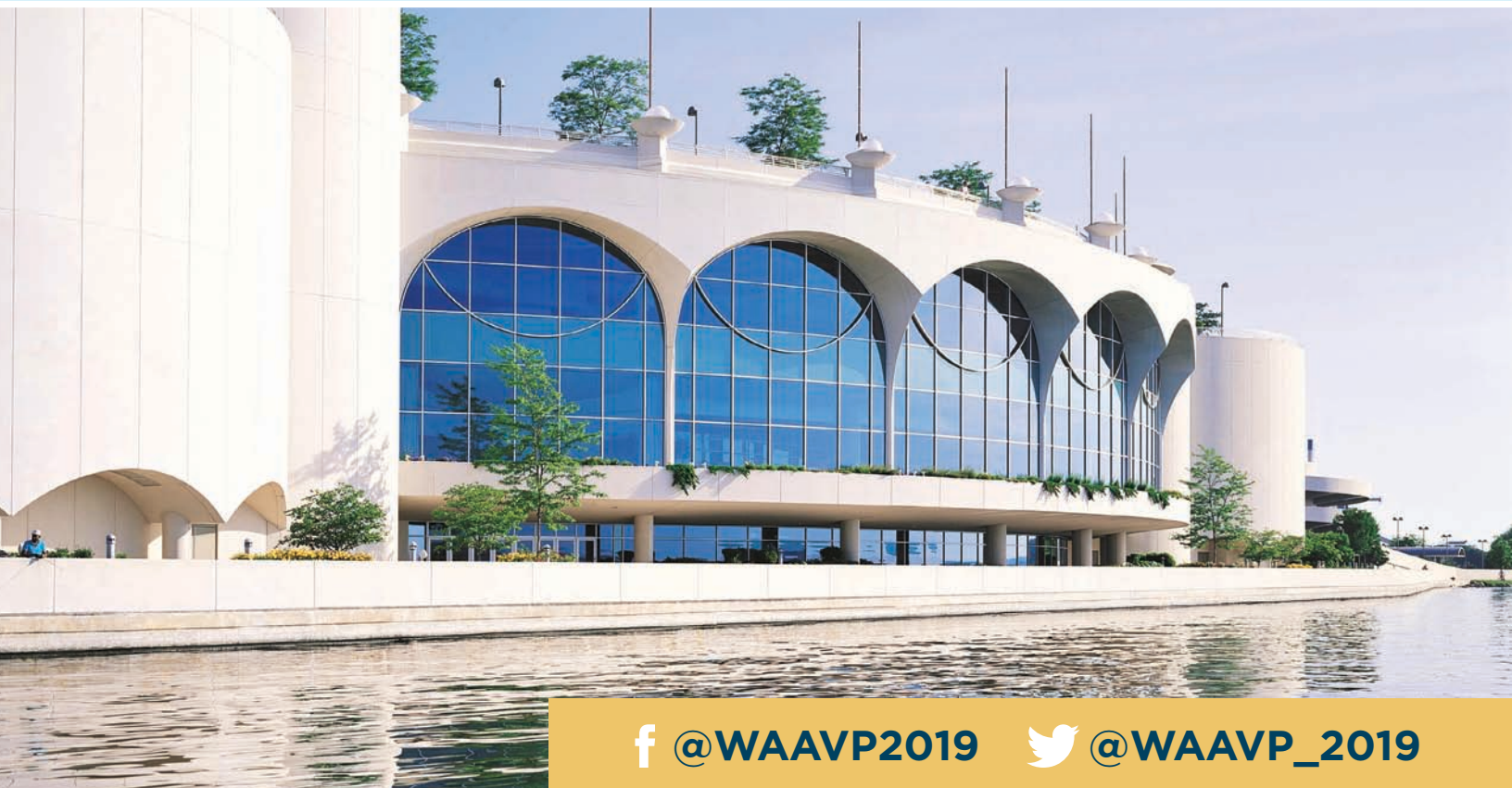
# WAAVP

27<sup>th</sup> 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 64<sup>th</sup> American Association of Veterinary Parasitologists  
Annual Meeting & the 63<sup>rd</sup> Annual Livestock Insect Workers Conference*

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of the peripartum period on the helminth parasite load, the anthelmintic efficacy of Monepantel during the gestational period of the sheep and whether its use generates any influence on the development of gestation and the health of newborn lambs. Thirty-two pregnant sheep were divided into two groups (G) of 16 animals each, according to egg count per gram of feces (EPG) at the 4th week of gestation (WG). G1 was treated with Monepantel at the 8th and 16th WG; G2 was untreated (control). Stool were collected for EPG at 4th, 8th, 12th, 16th and 20th WG and two weeks after lambing. At birth, all newborns were clinically examined. Monepantel did not present side effects in the gestation of the sheep, and all the offspring were born healthy. It was also verified that the first 10 days after delivery correspond to the period with the highest parasitic infection. In the present study, the treatments with interval of 63 days showed efficient reduction of EPG during peripartum. In addition, Monepantel did not cause clinical and gestational changes in the offspring, the two treatments performed at the 8th and 16th week of gestation had satisfactory efficacy in the control of GN in pregnant sheep.

#### PS02.85 Combination of Bioactive Phytochemicals and Synthetic Anthelmintics: In Vivo and in Vitro Assessment of the Albendazole-Thymol Association

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The search of novel strategies is an urgent need considering the widespread increasing of anthelmintic resistance in livestock. Bioactive phytochemicals may contribute to improve parasite control by enhancing the effect of existing anthelmintic drugs.

This work evaluated the in-vivo and in-vitro pharmaco-chemical interaction and the in-vivo efficacy of the combination of albendazole (ABZ) with a phenolic natural monoterpene, thymol (TML), in lambs naturally infected with resistant gastrointestinal nematodes. Thirty (30) lambs were allocated into three (3) experimental groups. Each group was treated orally with either ABZ (5 mg/kg), Thymol (150 mg/kg, twice every 24 h) or the co-administration of both compounds. Blood samples were collected between 0 and 51 h post-treatment and TML, ABZ and its metabolites were determined by HPLC. Individual faecal samples were collected at days -1 and 14 post-treatment to perform the faecal eggs count reduction test. Additionally, the effect of TML on the metabolic sulphoreduction and the sulphonation of ABZ sulphoxide was in-vitro assessed using ruminal content and liver microsomes, respectively. No changes on the pharmacokinetic behavior of ABZ sulphoxide were observed in the presence of the natural product (TML). In contrast, the ABZ sulphone C<sub>max</sub> and AUC were lower ( $p < 0.05$ ) in the co-administered animals ( $0.16 \pm 0.07 \mu\text{g/mL}$  y  $3.63 \pm 1.21 \mu\text{g.h/mL}$ ) compared with those that received ABZ alone ( $0.45 \pm 0.15 \mu\text{g/mL}$  and  $9.50 \pm 2.84 \mu\text{g.h/mL}$ ). TML was detected in the bloodstream between 1 and 51 h post-treatment, which indicates the time of target nematodes exposure to the bioactive monoterpene. However, the in-vivo efficacy of TML was 0% and the presence of TML did not increase the efficacy of ABZ. The presence of TML inhibited significantly ( $P < 0.05$ ) the ruminal sulphoreduction and the hepatic sulphonation of ABZ sulphoxide. In-vivo pharmaco-parasitological studies are relevant to corroborate the adverse kinetic/metabolic interactions and the efficacy of bioactive natural products combined with synthetic anthelmintics.