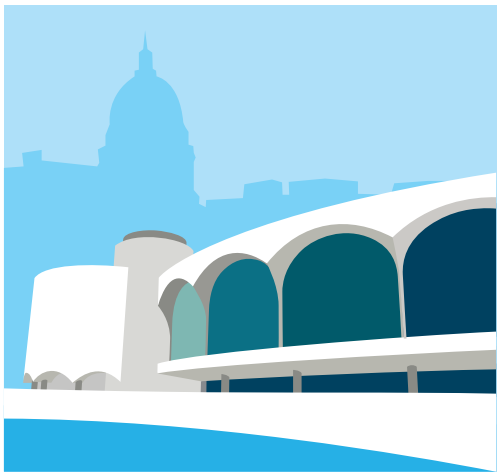


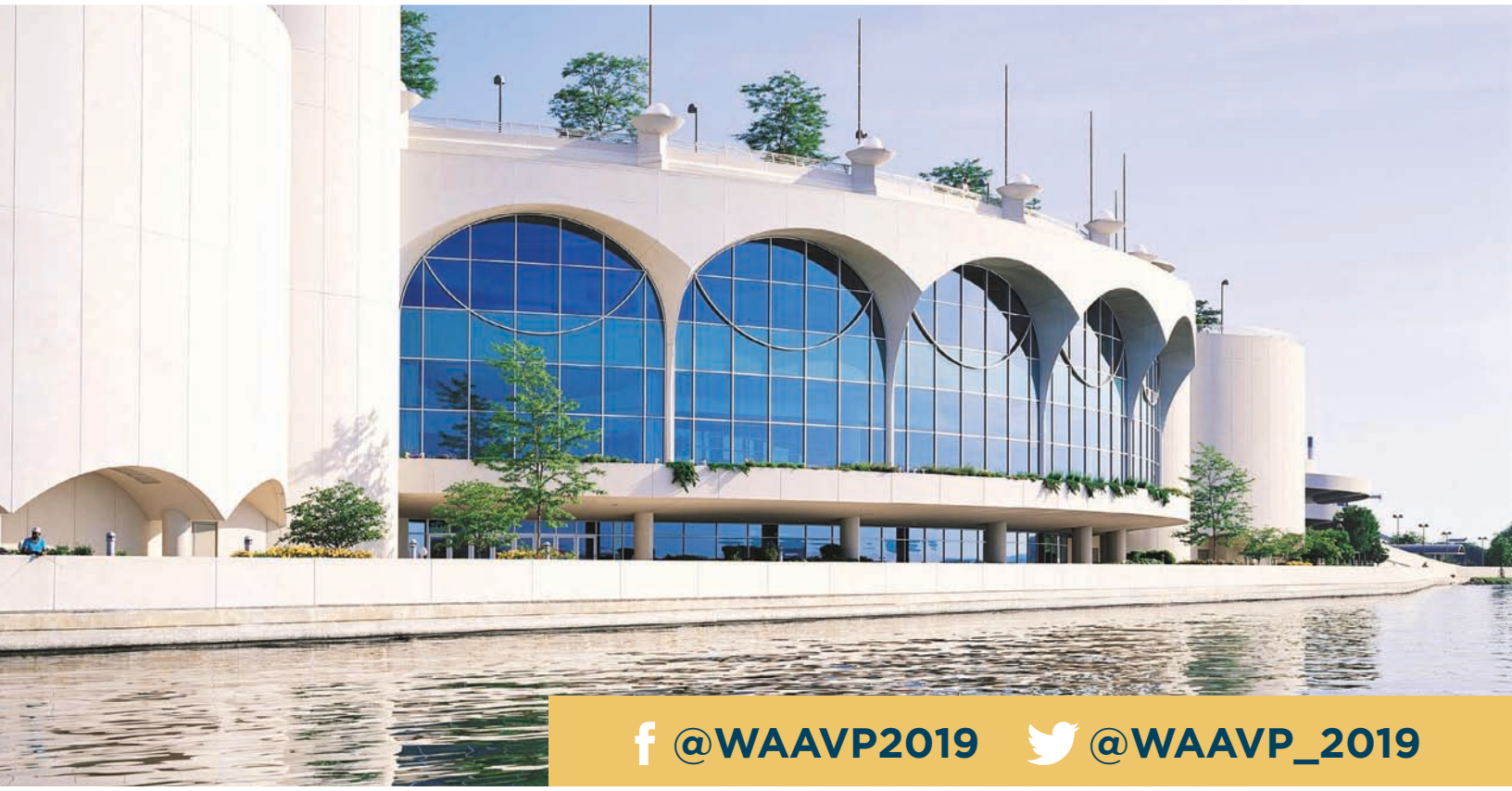
WAAVP

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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Table of Contents

Keynote Presentation

Plenary Lectures

Oral Sessions

Poster Sessions

Packet Test (LPT) and Adult Immersion Test (AIT). LPT with a discriminating dose of deltamethrin (75ppm) showed a mortality of 59% of R. microplus larvae. Mortality of R. microplus larvae was 100% at concentration of 9 ppm, 8 ppm and 7 ppm with piperine, ZnONPs and NZPF, respectively. AIT with a discriminating dose of deltamethrin (75ppm) against adult R. microplus showed a mortality of 40%, oviposition inhibition of 78.309% and the lowest egg mass weight with 17.8±1.31 mg. Mortality rate and oviposition inhibition of R. microplus were 100% whereas egg mass and reproductive index were completely nil with both piperine and ZnONPs at a concentration of 20 ppm and NZPF at a concentration of 15 ppm. NZPF showed a potent ovulation inhibitory activity with significantly ($P<0.05$) lower IC50 and IC99 values compared to ZnONPs and piperine.

Both LPT and AIT results indicated the development of resistance in R. microplus ticks against deltamethrin. NZPF, ZnONPs and piperine were found to have significantly ($P<0.05$) higher acaricidal activity. However, NZPF had high acaricidal efficacy at lower concentrations than pure phytochemical piperine, ZnONPs and deltamethrin. NZPF could be potential alternative to routine chemical acaricides for control of tick infestation of cattle in the wake of the development of acaricidal resistance, residual effect and environmental pollution.

OA39.08 Failure of Macrocyclic Lactones to Control Psoroptic Mange Infection in Feedlot and Grazing Beef Cattle

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The current work assessed the relationship between pharmacokinetic behavior and clinical efficacy of ivermectin (IVM) or doramectin (DRM) against natural Psoroptes ovis var. bovis infection in cattle. The study involved two trials (I and II) carried out on different beef cattle production systems, a feedlot (Trial I) and a grazing (Trial II) system. In Trial I, 40 mange-infected steers were allocated into 4 groups (n=10) and treated with a single (day 0) or repeated (days 0 and 7) subcutaneous injection of two different formulations of IVM (1%) at 0.2 mg/kg. In Trial II, 20 grazing calves with active mange infection were allocated into 2 groups (n=10) and treated with a single subcutaneous injection of either IVM (1%) or DRM (1%) at 0.2 mg/kg. Blood and skin samples were collected from 8 animals of each group to measure IVM/DRM concentrations by HPLC. Skin scraping samples were collected from each animal and mites were counted. In Trial I, the repeated administration of IVM increased the systemic availability and skin drug exposure compared to the single treatment ($p<0.05$). However, both formulations failed to achieve a clinical mange cure at either single or repeated treatment. Efficacy of IVM was 10% (single dose) and 50% (repeated treatment) at day 14 post-treatment. The non-cured animals remained with active mange 28 days post-treatment. No differences ($p>0.05$) in the P. ovis scores density were observed after single or repeated treatments. In Trial II, there was also a positive correlation between IVM or DRM concentrations in plasma and skin samples. Although IVM and DRM failed to obtain a complete parasitological cure, the efficacy of DRM was higher (80%) than those obtained by IVM (10%)($p<0.05$).Additional studies are needed to confirm the presence of P. ovis populations resistant to macrocyclic lactones, and to enhance the control of psoroptic mange in cattle.