NOVEL APPEASING PHEROMONES TO MINIMIZE STRESS DURING METAPOPULATION MANAGEMENT OF AFRICAN WILD DOGS

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In the last century, human persecution and increased habitat fragmentation has reduced African wild dog populations from around 500,000 to 6,600 individuals, with the population continuing to decline. In South Africa, metapopulation management has been instrumental to the survival of populations across fragmented habitats, and entails the translocation and artificial new pack formation of animals to reinforce populations, maximize genetic dispersal and reintroduce animals into their former range. However, temporary captivity during such conservation interventions regularly cause chronic stress in African wild dogs, and can result in increased aggression, disrupted pack hierarchy, injury and occasionally mortality. Pheromones are naturally occurring chemicals that can moderate behaviours and physiology in conspecifics. Appeasing pheromones identified in domestic dogs (DAP) are known to reduce stress and aggression. When applied to African wild dog packs, we showed DAP treatment decreased faecal androgen metabolite concentrations and shifted dominance behaviour from contact to non-contact compared to controls (Van den Berghe et al. PLoS ONE 14(3): e0212551). However, because pheromones are largely species-specific, an African wild dog-specific appeasing pheromone (AWDAP) should elicit a stronger beneficial physiological and behavioural effect during conservation interventions. In this project, AWDAP will be isolated and applied to packs undergoing translocation in South Africa. Using a combination of behaviour, faecal hormone metabolites and antibodies, animals will be monitored for reduced stress and aggression, improved immune function and greater social cohesion, all of which should ultimately confer a survival advantage to the pack upon release into the wild.



33rd Annual Conference

8-10 December 2020 Online Australia

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