I6 - Effect of vaccination with a recombinant Teladorsagia circumcincta prototype in the response to experimental infection of two Canarian sheep breeds

Cynthia Machín[1]; Jorge F. González[1]; Tara Pérez-Hernández[1]; Magnolia Conde de Felipe[1]; Harry Wright[2]; Yolanda Corripio-Miyar[2]; Dan Price[2]; Alasdair Nisbet[2]; Tom N. McNeilly[2]; Jacqui Matthews[2]; Julia N. Hernández[1]

[1]Universidad de Las Palmas de Gran Canaria. Instituto Universitario Sanidad Animal y Seguridad Alimentaria. Trasmontaña s/n. 35413. Arucas. Las Palmas. Spain. [2]Moredun Research Institute, Midlothian EH26 0PZ, Scotland, UK.

Gastrointestinal nematodes (GINs) cause severe production losses worldwide. This situation is aggravated by increasing drug resistance. Therefore, alternative control methods to anthelmintics are needed. In this sense, researchers from Moredun Research Institute (UK) have developed a successful prototype of recombinant vaccine against *Teladorsagia circumcincta* (Nisbet et al., 2013). On the other hand, it has been demonstrated that two native sheep breeds from the Canary Islands, Canaria (CS) and Canaria Hair Breed (CHB) present differences in susceptibility in experimental inoculations against *Haemonchus contortus* (González et al., 2008) and *T. circumcincta* in natural mixed infections. The objectives of this study were comparing the efficacy of this vaccine in these two breeds experimentally infected with *T. circumcincta* and to confirm breed differences in resistance to this nematode specie. The vaccine regulated worm length and fecundity in CS and reduced, although not significantly, the worm burden in CHB, suggesting a different vaccination-response between breeds. The comparison of control groups showed lower fecal egg counts, delay in development of worms and reduction in the length and fecundity of adult worms in CHB compared to CS, confirming differences in resistance between breeds. Finally, significant differences in worm burdens in CHB-vaccinated group was observed with respect to both CS groups, suggesting a synergistic effect of genetic resistance and vaccination. Acknowledgements: European Union's Horizon 2020 research and innovation programme under the grant agreement No. 635408 (PARAGONE) and Becas Innova (FULP).

Nisbet et al., 2013.Vaccine 31 (2013) 4017– 4023.
González et al., 2008. Veterinary Parasitology 153 (2008) 374–378.