

Duration of protection provided by *Barbervax*® in merino ewe hoggets

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Abstract.

The *Barbervax*® vaccine directed at hidden antigens of *Haemonchus contortus* is an important development in gastrointestinal nematode control in sheep. We investigated the duration and level of protection against *H. contortus* in hoggets following a full *Barbervax*® course in the 2nd year of life. The effects of vaccination on haematological variables and the association between antibody levels, in response to vaccination, and faecal worm egg counts (WEC) are also reported. A 2 x 3 factorial design was used to test Year 2 vaccination (vaccinated vs control) on the duration of protection following artificial challenge at 4, 8 and 12 weeks post final vaccination with a bolus dose of 5000 *H. contortus* larvae per ewe. Vaccinated animals received four Year 2 vaccinations 4-5 weeks apart between December 2015 and March 2016, controls only received the first vaccination. 120 Merino ewes approximately 16 months old were used with 20 animals per group. Vaccination significantly reduced WEC following challenge at 8 weeks but not at 4 or 12 weeks. Vaccination had no effect on red and white blood cell parameters. Vaccine-specific antibody levels were higher in vaccinates than controls and declined with time after vaccination. No association between individual antibody titre and WEC was found. The results of the experiment demonstrated that *Barbervax*® protection may persist for up to 8 weeks after the final vaccination in year 2 but suggest that antibody titre is a poor indicator of protection following artificial challenge.