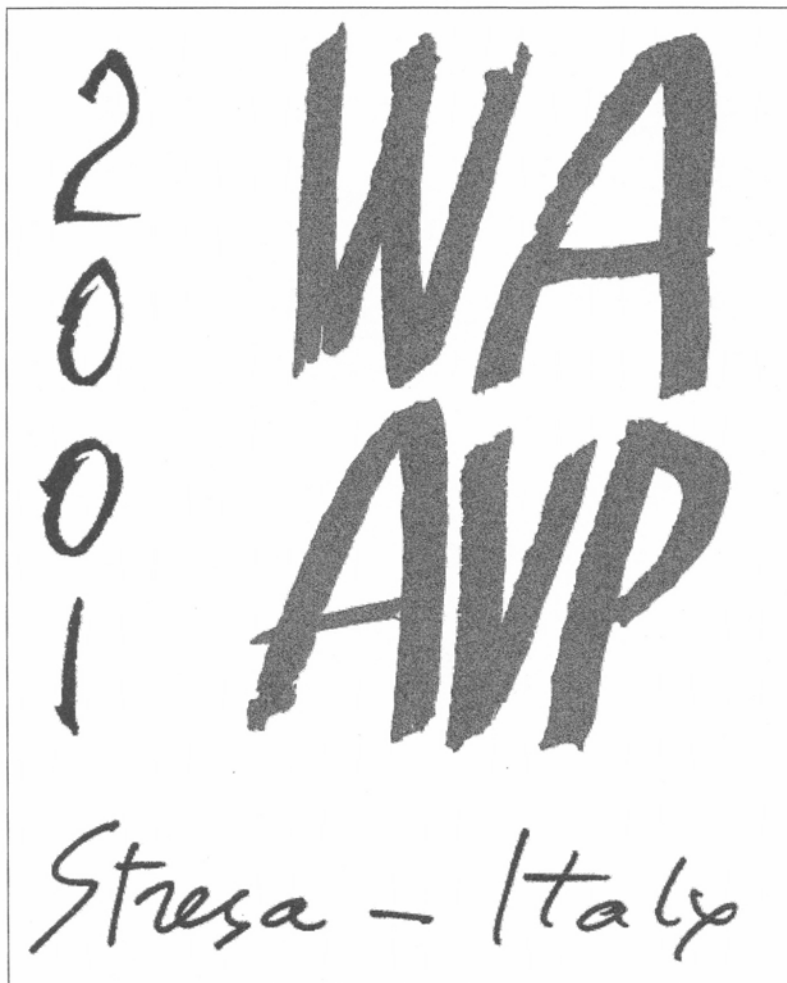


# ABSTRACTS



The 18th International Conference  
of the World Association for the  
Advancement of Veterinary Parasitology

**Promoting Advancement,  
Preserving Tradition**

*26-30 August 2001, Stresa, Italy*

**C2 p****EVALUATION OF GUT MEMBRANE PROTEINS OF HAEMONCHUS CONTORTUS AS CANDIDATE VACCINE ANTIGENS IN SHEEP GRAZING NATURALLY INFECTED PASTURE.**W.D. Smith<sup>1</sup>, J.A. van Wyk<sup>2&3</sup> and M.F. van Strijp<sup>3</sup><sup>1</sup> Moredun Research Institute, Pentlands Science Park, Bush Loan,, Penicuik, Midlothian, Scotland. EH26 OPZ.<sup>2</sup> Faculty of Veterinary Science, University of Pretoria, Private Bag X04, 0110 Onderstepoort, South Africa.<sup>3</sup> Onderstepoort Veterinary Institute, Private Bag X05, 0110, Onderstepoort, South Africa.**Background:** Numerous trials have demonstrated that gut membrane proteins from *Haemonchus* can protect against an artificial challenge, but the potential against natural challenge in a commercial sheep rearing area has not been investigated.**Method:** In a trial lasting eleven months in South Africa, faecal egg counts and haematocrits of sheep vaccinated with gut membrane proteins of adult *Haemonchus contortus* were compared with unvaccinated controls grazing pasture contaminated with the parasite.**Results:** Vaccination reduced egg output by more than 82% on average during one four month period of the trial and simultaneously significantly reduced the degree of anaemia and deaths due to haemonchosis. Although vaccine immunity was not sufficiently long lasting to prevent a surge in egg output which occurred after the onset of a period of irrigation, re-vaccinating the sheep at this point cleared their newly acquired infection and rapidly restored protection to approximately the level observed beforehand.**Conclusions:** It was clear that a vaccine based on parasite gut membrane proteins could offer substantial benefits in the control of natural haemonchosis.**C4 p****PRELIMINARY CHROMATOGRAPHIC STUDY OF DICROCOELIUM DENDRITICUM ANTIGEN**Robles<sup>1</sup>, L.C., Manga-González<sup>1</sup>, M.Y., & González-Lanza<sup>2</sup>, C.<sup>1</sup>Departamento de Bioquímica y Biología Molecular, Área de Química Analítica, Universidad de León, Campus de Vegazana, s/n 24071 León, Spain. <sup>2</sup>Consejo Superior de Investigaciones Científicas (CSIC), Estación Agrícola Experimental, Aptdo. 788, 24080 León, Spain.**Background:** The aim of this research was to try to separate different fractions of the *D. dendriticum* antigen to determine their specificity and protection capacity against the parasite.**Method:** Somatic antigen samples were studied by ion exchange chromatography (Column: Scharlau Science Nucleosil 300-5 C-18) in reverse phase working in isocratic and in gradient elution comparing water, acetonitrile and methanol as solvents.**Results:** Working in isocratic elution the chromatogram shows only one peak at 5 minutes. Fraction separation was not possible. However, in gradient elution using water as solvent A and acetonitrile gradient as solvent B, the appearance of different bands was observed at different times, mainly for low concentrations (10-30%) of solvent B. Nevertheless the main peak belonging to the non-retained fraction appeared at 5 minutes. Other bands appeared earlier, which must correspond to different components presents in the somatic antigen. The appearance of a wide band is also observed at 20 minutes. This band must be related to the presence of different components that are eluted slowly under these conditions.**Conclusion:** It is possible to separate different components in the somatic antigen of *D. dendriticum* using HPLC technique.**C3 p****HUMORAL IMMUNE RESPONSE OF CALVES TO SOMATIC ANTIGENS AND EXCRETION/SECRETION PRODUCTS OF THE IMMATURE PHASES OF HAEMONCHUS PLACEI (Place, 1833) Ransom, 1911**SATO, M.O.<sup>1</sup>; PAIVA, F.<sup>1</sup>; VIEIRA-BRESSAN, M.C.R.<sup>1</sup><sup>1</sup> Depto de Parasitologia, Inst. de Ciências Biomédicas, Univ. de São Paulo, Av. Prof. Lineu Prestes, 1374, CEP-05508-900 São Paulo, BRAZIL.**Background:** *Haemonchus placei* is one of the most important nematodes in Brazil, because of its haematophagous habits and high pathogenicity. The aim of this work was to study the humoral immune response against antigens of immature phases of *Haemonchus placei* in calves using different schemes of infection. **Method:** Calves were divided into groups of 5 and 9 months: A and E were the non infected controls. Group B (5 months) was infected with two doses of 50,000 and an additional dose of 100,000 infective larvae (L3) of *H. placei*, group C (5 months) and group D (9 months) were prime infected with 100,000 L3. **Results:** It was observed a 4 weeks pre patent period. The average of adult worm burden was 13,025 for group B, 27,650 for group C and 21,133 for group D. The larval antigens were obtained through in vitro culture of the nematode and were recovered from somatic antigens and from excretion/secretion products of third and fourth stages. The humoral immune response to *H. placei* infection stimulates the production of specific antibodies against different antigens and phases of development of the parasite, the response is predominantly IgG, sub class IgG1. It was possible to observe an age and number of infections effect in the build up of the humoral immune response. The immune reaction of IgG occurs against proteins of many different molecular weights, including: a) L3 soluble somatic antigens: 40, 44, 56 and 80 kDa for animals of 5 months; 24, 44, 50, 54, 60 and 70 kDa for the 9-month animals. b) L4 soluble somatic antigens: proteins of 40, 50 and 35 kDa in the animals of 5 months age, 24, 44, 50, 54, 60 and 70 kDa for the 9-month animals. c) L3 excretion/secretion antigens: proteins of 19, 30, 50 and 75 kDa for the younger animals and 50 and 75 kDa for the animals of 9 months. d) L4 excretion/secretion antigens: proteins of 14, 19, 27, 37, 40, 50, 54 kDa for the younger animals and 14, 35, 40 and 50 kDa for the older ones. **Conclusions:** The outcome of infection by *H. placei* is influenced by the age of the host and the number of infections, which affect the build up of the humoral immune response against antigens of the various developmental stages of the parasite.**C5 p****HUMORAL RESPONSE TO TRICHOSTRONGYLID INFECTION IN EWES WITH LOW OR HIGH FECs**Moskwa<sup>1</sup>, B., Cabaj<sup>1</sup>, W., Doligalska<sup>2</sup>, M.<sup>1</sup> W. Stefański Institute of Parasitology of the PAS, Twarda 51/55, 00-818 Warszawa, Poland, tel. +48 22 620 62 26<sup>2</sup> Department of Parasitology, University of Warsaw, Miecznikowa 1, 02-096 Warszawa, Poland, tel. +48 22 554 11 15

One option of nematode control in sheep is selective breeding for a reduction in FECs following natural infection. The study was carried out on two divergent groups of naturally-infected Polish Wrzósówka young ewes exhibiting low or high FECs. The aim of the study was to estimate the association between serum IgG, IgA and IgM level against somatic antigens derived from a mixed population of trichostrongylid nematodes using ELISA test. FECs were very low at the beginning of season, then peaked in the second half of season. In both groups, FECs decreased in the last month of the study. IgG and IgM values were lower at the beginning of season (April-May), then increased. IgG levels were stable from July to November, but IgM fluctuated. Contrary to that, IgA values were highest at the beginning of season (April-June), then decreased but achieved the higher level in the end of season.

General Linear Model procedure for FECs, IgG and IgM levels revealed significant differences between groups ( $0.001 \leq P \leq 0.032$ ). Statistical analysis revealed a significant influence of month on all measured parameters ( $P \leq 0.001$ ). In both selected groups, IgA level correlated negatively with IgM and IgG ( $P \leq 0.001$ ) but IgM and IgG level correlated positively ( $P \leq 0.001$ ). Additionally, significant correlations between humoral response and FECs were observed.