

## Preliminary Immunological Screening of STEC-Shedding Slaughter Cattle

### INTRODUCTION:

Cattle are regarded as an important reservoir for Shiga toxin-producing *E. coli*. Attention is especially given to the well-known O157, however the non-O157 have been increasingly isolated from human clinical cases such as (bloody) diarrhoea and HUS. A preliminary screening was conducted to study the immune response of 24 STEC-shedding cattle at the slaughterhouse as little information is known about the bovine antibody response against STEC.

### METHODS:

Faeces were screened bacteriologically and sera of the positive animals were screened by ELISA for antibodies against 4 virulence factors of STEC (int  $\gamma$ , EspA, EspB and tir). Antigens were suspended in coating buffer prior to incubation overnight (4°C). Plates were washed and blocked with 1% BSA. Following washing, the sera were applied and antibody-antigen complexes were detected using polyclonal rabbit anti-cow immunoglobulin/HRP. Colour reactions were developed by addition of ABTS buffer solution.

### RESULTS AND DISCUSSION:

Three hundred and four slaughter cattle were screened bacteriologically and 24 tested positive for STEC O157 and/or STEC non-O157. The serum antibody response was not correlated with STEC excretion in individual cattle at the slaughterhouse. One quarter of the animals showed no antibody response against the 4 antigens. Another quarter only had a positive response against intimin  $\gamma$ , whereas the other half of the animals showed a highly variable immune response against one or more antigens. A longitudinal screening will be performed in the near future. As the immune response is the result of previous and current infections, this will give as a better insight in the association of the bacteriological and serological results.

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