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The SERASCA-TEST: A new tool to detect roundworm infections in fatteners

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Introduction:

The pig roundworm, *Ascaris suum*, is still highly prevalent in modern pig farms (1). The main reason for this is the lack of appropriate diagnostic tools to detect or measure *A. suum* infection levels on a farm. The detection of parasite eggs in the faeces by coprological examination is hardly ever performed in practice and is prone to false negative and false positive results (2). Recording white spots on the liver however, is often performed but is subjective and possibly underestimates the true prevalence of *A. suum* on a farm. This leaves the farmer and veterinarian with little information on what the actual worm-status of the herd is and how this is evolving over time. In this study, we describe the evaluation and usefulness of a new serological diagnostic tool (SERASCA[®]-test) for the detection of *A. suum* infections on pig farms.

Materials & Methods

The SERASCA[®]-test used in this study was essentially used as described by Vlaminc et al. 2012 (1).

For the determination of the cut-off and the sensitivity and specificity of the test, 190 pigs were infected twice weekly with 25 *A. suum* eggs per Kg for 14 weeks. Serum and faecal samples were collected at week 7 and 14 p.i. To investigate how the SERASCA[®]-test results reflect liver damage, 30 blood samples were collected from fatteners during slaughter from 20 selected pig farms and the number of affected livers from that batch of pigs was recorded.

Results:

Initial validation of the test using sera of the experimentally infected pigs demonstrates that the SERASCA[®]-test is able to detect long-term exposure to *A. suum* with a high sensitivity and specificity (99.5% and 100.0% respectively). Furthermore, this serological technique proves to be more sensitive than faecal examination on week 7 and 14 (99.5% and 100% compared to 59.5% and 68.4% respectively). Furthermore, when white spot counts from recently slaughtered pigs from 20 different pig farms are compared with their respective SERASCA[®]-test results, a marked discrepancy is noticed between the per-centage of seropositive pigs compared to the percentage of livers that are affected in that group of pigs.

Discussion:

The results presented in this study again emphasise the fact that by using coprological examinations or the percentage of affected livers to detect *A. suum* infections on pig farms, a severe underestimation of the actual problem is possible. The SERASCA[®]-test evaluated in this study provides pig farmers and veterinarians with an easier and more sensitive way to estimate the overall infection intensity of *A. suum* on their farm. How the results of the SERASCA[®]-test stand in relation to the economical parameters of the farms is still unknown and is currently under investigation.

References:

- (1) Vlaminc et al., 2012. *Vet Parasitol* 189: 267-273.
- (2) Boes et al., 1997. *Int J Parasitol* 27, 833-8.