

Strategic deworming of pigs in Asia

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Numerous studies have shown the economic relevance of *Ascaris suum* infestations in pigs. These show a negative impact on average daily gain (ADG) and feed conversion rate (FCR).

At slaughter, white liver spots result in decommissioning of the liver, carcase quality is compromised and there are significantly more pleurisies when white liver spots are present.

Recent studies have demonstrated the correlation between chronic respiratory problems and white liver spots. Immune response to vaccination is also compromised. The presence in grower and finisher pigs is a high risk factor for PMWS. Mortality, the amount of unfit pigs and the total medication cost are negatively impacted by the presence of *Ascaris suum*.

As a consequence, the total economical damage caused by *Ascaris suum* can be as high as US\$6 per slaughtered pig.

With the implementation of a strategic deworming programme, these negative effects can be successfully minimised.

Strategic objectives

The objective of strategic deworming is to interrupt the life cycle of *Ascaris suum* in order to prevent the development of new adult worms and, by doing so, stop new contaminations in the environment. This brings down the risk of continuous recontamination.

A treatment of fattening pigs with flubendazole with an interval of five weeks was proven successful in controlling the parasite. Flubendazole can be mixed in the feed at 30ppm (Flubenol 5%), or can be administered via the drinking water at 5mg flubendazole per kg live weight (Solubenol).

However, the problem most farmers in Asia are facing is the evaluation of the farm situation.

The diagnostic tools in the field are limited and not always easy to interpret. Zootechnical parameters and costs are not always in line with the

parameters of the reference farms where the trials are being held.

Therefore, an interactive calculation tool has been developed allowing the farm to evaluate the impact on farm profitability of *Ascaris* infestation for their specific situation and to follow the evolution after the implementation of the strategic deworming programme.

Materials and methods

In a first step, the situation on the farm is assessed. Four farm profiles are taken into account and, based on four critical questions, each farm is categorised in one of these profiles (see Fig. 1). The questions concern both the extent of liver damage at slaughter and the general health situation on the farm. The extent and the chronicity of both parameters are probed.

Once the actual farm profile is defined, the economical impact can be calculated. The norms used for the indices were supplied by Applied Animal Sciences Research (Praktijk-onderzoek Veehouderij) based on the results of Agrovision 2004 for the calculations of the financial differences in Dutch pig production circumstances.

However, technical parameters can be adapted to the local circumstances. Furthermore, slaughter

penalties and carcase quality evaluations can be switched off according to the payout system that is applicable in your market. By introducing the local currency value of €1, all economical data are automatically converted into your local currency.

Results and interpretation

The calculation model will provide you with a detailed overview of the loss per parameter, of loss per pig slaughtered and of the yearly loss on farm level due to the *Ascaris* infection pressure. For each profile, an interpretation is given of what is occurring on the farm:

- **Profile A.** Farms with low percentage of condemned livers and with a good health. These farms have an early build up of worm infection but a low infection pressure.
- **Profile B.** Farms with a high percentage of condemned livers, but still with a good general health. These farms have a delayed build up of the worm infection, with a relatively low infection pressure.
- **Profile C.** Farms with a low percentage of condemned livers and animals are in poor health. There is an early build-up of worm infection and the infection pressure is high.
- **Profile D.** Farms with a high percentage of condemned livers and

animals are in poor health. In this case, there is a delayed build-up of worm infection and a high infection pressure. The objective is to either maintain a good strategic deworming strategy (profile A), or to implement an adapted strategy to evolve to a profile A status in a first step and in a second step to maintain this profile. The model allows you to re-evaluate your farm situation and measure the success of your implemented control programme.

It is important to realise that it can take up to 15 months to reduce the *Ascaris* infection to a minimum. This minimum infection level will depend a lot on the farm situation (infrastructure, empty period, correct implementation of the strategic deworming).

Hence, it is also important to realise that the full economic benefit of strategic deworming will only be reached once the farm will have reached the profile A level.

As *Ascaris* infections are often underestimated, a large part of the infections are not treated properly.

This interactive tool allows the farmer to calculate the economical impact of *Ascaris suum* on his farm and then to monitor the evolution and success of his deworming strategy.

The tool is available on CD and can be obtained free from your local Janssen representative. ■

Fig. 1. Assessment of farms is based on four farm profiles (see text).

