Fecal Egg Counts in Swine Experimentally Infected with *Strongyloides ransomi*

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*Strongyloides ransomi* (SRM) is a nematode commonly found in swine. A few studies of severe strongylidiasis in swine have been reported [2, 3], however, generally the pathogenicity of the nematode is considered mild and little attention has been paid to it. In 1989, one 1-month-old piglet showed severe SRM infection with a EPG (eggs per gram feces) value of 316,600 and developed watery diarrhea at a farm in Pranburi district of Prachupkirikhan province in Thailand [6]. With the fecal material of that piglet, the following experimental infections of pigs were performed.

Four parasite-free male Landrace pigs, 45 to 180 days old and 12 to 60 kg in body weight, were reared in an animal house at the National Animal Health and Production Institute of Thailand. SRM infective larvae were obtained by cultivating the faces of the above mentioned piglet. Pigs were exposed to the infective larvae by the methods described previously [5]: that is, a wet sheet of cotton wool containing 100,000 eggs was incubated at 25°C for 4 days. Just before the exposure, the cotton sheet was checked under a microscope for the presence of many larvae which moved actively, and subsequently the cotton sheet was attached to each pig on the lateral side of trunk for 5 hours. Pig 1 was exposed to the infective larvae obtained originally from the naturally infected piglet. On the same day, Pigs 2 and 3 were exposed to the larvae obtained from Pig 1. Pig 4 was exposed to the larvae obtained from Pigs 2 and 3.

Fecal examination was carried out daily from the day of exposure to that of autopsy by the modified McMaster technique. EPG was calculated by multiplying the egg counts by 200. Body temperature and fecal consistency were also examined each day. Pigs Nos. 1, 2, 3 and 4 were killed 19, 49, 91 and 27 days after exposure, respectively. They were examined for the gross lesions of all the organs and parasitic SRM females were recovered from the small intestine.

Eggs appeared in the feces from days 5 to 8 after exposure. The maximum EPG value of SRM ranged from 1,000 to 162,600 in the pigs. Transient slight diarrhea and increase in body temperature were observed from 1 to 7 weeks after exposure in Pigs 2 and 3, whereas Pigs 1 and 4 showed no symptoms. Necropsy findings indicated that 96 to 1,093 parasitic SRM females were detected in the small intestine, but no lesion could be found in any organs of the pigs (Table 1).

Egg outputs are shown in Fig. 1. Only a small number of eggs were detected in the feces of Pigs 1 and 4, while great numbers of eggs were always passed in the feces of Pigs 2 and 3 which were 12 kg in body weight. In Pigs 2 and 3, high EPG values of more than 10,000 were counted from 14 to 49 days after exposure. The maximum EPG values of 162,600 and 83,400 appeared in Pigs 2 and 3 respectively at 29 days after infection.

Some reports are available on fecal egg output in pigs experimentally infected with SRM. The maximum EPG of 3,350 was noted in a pig infected with 250,000 SRM infective larvae [4]. In the study of dynamics of fecal egg output, pigs exposed to 3,000,000 SRM infective larvae showed more EPG than 100 during the period from 2 to 6 weeks after exposure [1].

In the present study, EPG values differed among the

<table>
<thead>
<tr>
<th>Pig</th>
<th>Number</th>
<th>Fecal examination</th>
<th>Necropsy</th>
</tr>
</thead>
<tbody>
<tr>
<td>No.</td>
<td>Age in days</td>
<td>of larvae for exposure</td>
<td>Prepatent period in days</td>
</tr>
<tr>
<td>1</td>
<td>180(60)</td>
<td>100,000</td>
<td>8</td>
</tr>
<tr>
<td>2</td>
<td>45(12)</td>
<td>100,000</td>
<td>6</td>
</tr>
<tr>
<td>3</td>
<td>45(12)</td>
<td>100,000</td>
<td>7</td>
</tr>
<tr>
<td>4</td>
<td>69(13)</td>
<td>100,000</td>
<td>5</td>
</tr>
</tbody>
</table>

*The numbers are represented by those of eggs cultured.*

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four pigs, the reason of this being due to animal age and the number of infective larvae inoculated. Older Pigs 1 and 4 developed slight infection, whereas younger Pigs 2 and 3 did not show so severe clinical infections but their fecal egg count was large. The actual number of infective larvae inoculated could not be accurately determined since only eggs were counted before fecal culture [5].

The present findings of experiments almost agreed with those of Johnson et al. [1]. EPG values varied among the four pigs, and Pigs 2 and 3 showed the maximum EPG value of 162,600 and 83,400, respectively, which were by far greater than those in other reports [1, 4].

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REFERENCES