

ANTI-DYSENTERIC EFFECT OF VIRGINIAMYCIN IN PIGS

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The growth promoting effect of virginiamycin /vmycin/ is well documented. However, little has been published about the effectiveness of vmycin in the control, prevention and therapy of swine dysentery /SD/ in field experiments under different management conditions. Little is known about the combined anti-dysenteric and growth promoting effect of vmycin in large scale pig herds suffering from SD at different infection degrees. The anti-SD effect of vmycin is based on the high vmycin sensitivity of *Treponema hyodysenteriae*. We chose vmycin because our previous field observations revealed that tylosin and dimetridazol was gradually less active against SD. Investigations were carried out on 5894 pigs in 12 experimental groups at 3 large scale pig farms. The average number of animals per group was 491. The vmycin-containing preparation used by us was Stafac 500 /Smith Kline Anim. Health Prod., USA/ with 50% vmycin content. Trials were performed in a SD-affected herd /A/ and a slightly affected herd /B/ with 2 farm. SD preventing, therapeutic and growth promoting effects of vmycin were studied jointly. Vmycin was added to the feed in feed-mixing plants, rations were fed ad lib. and no other growth promoting agent was used during the trials; experimental and control animals were kept under identical conditions.

Table 1. Results of the vmycin feeding tests

Herd A	aver. daily gain g	feed conv. kg	No. of pigs to fi-SD	deaths days with SD	deaths
Controls /684 anim./	515	3.79	246	589 ^x	11
Groups treated with vmycin /822/	539	3.46	238	27	1
Difference vmycin vs controls	+24	-0.33	-8	-	-

x: pigs affected with SD, even repeatedly, during the entire length of the fattening

In the heavily infected herd A, 822 pigs were fed 80 mg/kg vmycin /160 mg/kg Stafac 500/ at bwt of 8-15 kg; 40 mg/kg at bwt of 15-40 kg; 20 mg/kg at bwt of 40-60 kg and 10 mg/kg at bwt of 60-105 kg. If symptoms of SD had appeared, vmycin dose was increased to 80 mg/kg in the weight groups above 15 kg whereafter pigs recovered in 2-3 days. The therapeutic dose of 80 mg/kg was fed for 3 weeks, then the dose was reduced again to that corresponding to the age group /Table 1/. Thus, the SD-affected pigs were successfully treated in all cases by feeding them 80 mg/kg vmycin. The experiment also demonstrated that the prophylactic dose of vmycin is at least 80 mg/kg in SD-infected herds. Lower doses did not prevent the appearance of SD. In spite of the unfavorable circumstances, the time necessary to reach the slaughtering weight became shorter by 8 days, the daily weight gain was higher in the experimental groups by 4.6% compared to the controls. The specific feed utilization was higher in the experimental groups by 9.5%. In herd B, SD did occur, but the number of affected animals was small and death losses were rare. Yet, the use of anti-SD drugs was

necessary.

Table 2. Results of the vmycin feeding test.

Herd B	daily gain g	feed conv. kg	No. of pigs fatten. with SD	days	SD
control	553	3.65	202	9	
vmycin-fed group	614	3.58	205	0	
difference /vmycin vs control	+61	-0.07	+3 ^x	-	

x: slaughter delayed

The "maximum" program /80,40,20,10 mg/kg vmycin feeding in weight groups listed in herd A experiment/ was tested in 1789 pigs. The effect of our "mixed", vmycin-metronidazole program /40,20,10,5 mg/kg vmycin in the previously listed weight groups, plus 15 mg metronidazole for 15 days in the first weight group/ was observed in 543 pigs. The "minimum" program /80,20,10,5 mg/kg vmycin/ was tested in 580 pigs. The control group consisted of 587 pigs. There was no SD in the maximum program fed animals /Table 2/. The results obtained with the mixed and minimum programmes were less favourable. In the mixed program, 6 cases of SD were found at the age of 160 days and 180 days each, in a total of 3 pens. SD was found on several occasions among the 580 pigs involved in the minimum program. At first, SD was found in 2 pens at the age of 95 days, following the suspension of the 80 mg/kg dose. Later, treatment for SD was necessary on 3 occasions. A total of 20 pigs contracted, and 1 died, of SD. The experiments carried out in herd B showed that vmycin, used in the dosages according to the maximum program, is suitable for the prevention of SD, to increase weight gain and to improve feed utilization.

Conclusions. The treatment with vmycin was able to prevent and cure SD, and, in addition, to promote the growth of the pigs. The preventive and therapeutic dose of vmycin was found to be 80 mg/kg for large-scale pig farms. SD soon disappeared when this dose was fed, or when a lowered dosage was increased to this level again. In herd B, which was slightly affected with SD /typical case/, the daily weight gain was higher in the experimental group by 11%, and the specific feed utilization also increased to a lesser degree and SD did not occur. The mode of utilization of vmycin depends on the conditions prevailing at the individual farms. In herds slightly affected with SD the maximum program used in herd B proved to be adequate. Feeding of vmycin /dose 80 mg/kg/ should be started immediately after weaning, and it should be continued until the age of 90 days. Then, the dosages can be reduced to half.

Summary. Anti-dysenteric and growth promoting effect of vmycin was studied on 5894 pigs in large scale herds affected with SD. It is suggested that its preventive and therapeutic dose for affected herds should be 80 mg/kg. The combined /anti-SD and growth promoting/ effect of vmycin could be best used by feeding 80 mg/kg from weaning up to 90 days of age. Then, according to the mentioned age or weight groups, the doses can be reduced to half.

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