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EFFICACY OF THE COMBINATION OF LINCOMYCIN AND SULPHAMETHAZINE IN PRODUCTION PERFORMANCES AND CONTROL OF INFECTIOUS PNEUMONIA IN SWINE

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ABSTRACT : Forty eight crossbred swine belong to Large White x American Landrace averaged 29.83 kg were randomly allotted into 2 groups. Twenty four pigs (4 pens) were fed 17 percent protein growing ration fortified with Tylan Sulfa for 45 days as treatment I. Another 24 pigs (4 pens) were fed also 17 percent protein growing ration fortified with Lincomycin plus Sulphamethazine for 45 days as treatment II. From 45 days to 90 days of feeding all pigs were fed the same 15 percent protein finishing ration alone. After 90 feeding days hogs were slaughtered to determine lung lesion.

No significant differences were found in average daily gain, feed conversion ratio and average daily intake at 45 and 90 feeding days of both groups. Percentage of pigs fed ration contained Tylan Sulfa and Lincomycin plus Sulphamethazine affected to infectious pneumonia were 69.23 and 76.92 percent and pneumonic area were 70.00 and 70.42 percent, respectively.

Mortality, morbidity and skeletal defects were not observed in all experimental pigs.

INTRODUCTION

It is recognized that respiratory disease or infectious pneumonia in piggeries is one of the most problem disease in swine production. This disease can spread everywhere even in the hygienic piggeries with good management practices. It affected to all ages of pigs raised in farm, especially, breeding stock. Sows and boars died of diseases in farm mostly caused by infectious pneumonia either bacterial or mycoplasmal pneumonia. The main difference of the two types of the pneumonia observed from their lungs is mycoplasmal pneumonia mostly affected to apical and cardiac lobes whereas the other lobes are usually normal while the bacterial pneumonia will show more affected lobes (Dunne, 1973; Bruner and Gillespie, 1973)

Logically, it is expected that diseases caused by bacteria or mycoplasma can be prevented or treated by antibiotics. Moreover, growth rate and feed efficiency of pigs will be better when the pathogenic infection has been control. Furthermore, it is generally

accepted that the efficiency of production performances should be better if the combination of antibiotic(s) and sulfa drug is used.

This study was conducted to evaluate the efficacy of antibiotic combined with sulfa drug added to the swine ration on preventing infectious pneumonia and as a growth stimulant.

The experiment was conducted in the Department of Animal Husbandry Faculty of Agriculture, Chiang Mai University from March - July, 1982.

MATERIALS AND METHODS

Twenty four barrows and twenty four gilts (Large White x American Landrace) were used in this experiment. Twelve barrows and 12 gilts were assigned at random to one treatment. The hogs were raised for 90 feeding days then slaughtered to determine the lesion of infectious pneumonia. The pigs were fed *ad libitum* by using self feeder with a 17 percent protein growing ration mixed with Tylan Sulfa dosed 500 gm per 100 kg feed for 45 days was indicated as control or treatment I. The pigs fed isonitrogenous and isocaloric ration mixed with 44/110 ppm of Lincomycin plus Sulphamethazine for 45 days as treatment II. The treatments were replicated 4 times.

After 45 days of feeding or about 60 kg liveweight the pigs were shifted to the same 15 percent protein finishing ration without any feed additives to be added. The pigs were fed 45 days more until 90 feeding days. The rations were used are presented in Table 1.

Water were provided to the animals by automatic waterers. The animals were weighed every two weeks and at 45 and 90 feeding days. Complete records of weights, feed consumption and lesion of infectious pneumonia were kept to determine the production performances and enzootic pneumonia of hogs.

After 90 days of feeding, 26 hogs (14 barrows and 12 gilts) of the two treatments were randomly slaughtered at the Meat Division, Chiang Mai Livestock Breeding Station, Chiang Mai, to determine the skeletal defects and virulence of infectious pneumonia at lungs.

RESULTS AND DISCUSSION

The average of various production traits are shown in Table 2. The average initial weight of animals in treatment I and II was 29.83 kg. The liveweight at 45 feeding days was 64.03 and 65.96 kg with average daily gain of 760 and 803 gm. feed conversion ratio 3.00 and 2.96 and average daily intake 2.28 and 2.38 kg respectively. No significant differences were observed in all production traits at 45 days of feeding between treatment I and II. However, at 45 feeding days hogs in treatment II had average daily gain, feed conversion ratio and average daily intake slightly better than hogs in treatment I. Similar results of production traits were obtained at 90 day of feeding.

For lung examination, 26 hogs out of 48 hogs were randomly slaughtered. All of hogs were healthy and had never been ill before. Four hogs (30.77%) in treatment I showed normal lungs and 9 hogs (69.23%) were affected to infectious pneumonia compare to 3 hogs (23.08%) were normal and 10 hogs (76.92%) were affected to infectious pneumonia in treatment II. Two hogs (15.38%) in treatment I were affected to mycoplasmal pneumonia with pneumonic area of 25% (23-30%) compare to only one hog (7.69%) in treatment II was affected by mycoplasmal pneumonia with pneumonic area of 10%.

Table 1. The composition and calculated nutrient of the experimental rations.

Ingredients (kg)	0-45 feeding days		45-90 feeding days
	T1	T2	T1 & T2
Rice bran	20	20	25
Broken rice	29.85	30.15	29.50
Ground yellow corn	29	29	30
Soybean oil meal	12	12	8
Fish meal	7	7	5
Dical. Phosphate	1	1	1.8
Biofac	0.15	0.15	0.15
Tylan S	0.50	-	-
Lincomix S	-	0.02	-
Salt	0.50	0.50	0.55
Total	100	100	100
Calculated nutrient			
Metabolizable energy			
Kcal/kg	3195	3206	3197
Crude protein (%)	17.00	17.02	14.77
Crude fiber (%)	3.69	3.69	3.89
Calcium (%)	0.66	0.66	0.72
Phosphorus (%)	0.94	0.94	1.09

hogs (15.38%) in treatment I were affected to mycoplasmal pneumonia with pneumonic area of 25% (23-30%) compare to only one hog (7.69%) in treatment II was affected by mycoplasmal pneumonia with pneumonic area of 10%.

Table 2. Summary of the production data.

Traits	At 45 feeding days		At 90 feeding days	
	Trt. I	Trt. II	Trt. I	Trt. II
Number of animals	24	24	24	24
Initial weight (kg)	29.83	29.83	64.06	65.96
Final weight (kg)	64.03	65.83	96.81	98.38
Weight gain (kg)	34.23	36.13	66.98	86.54
Average daily gain (g)	760	803	744	671
Feed consumption (kg)	102.56	106.88	224.63	229.17
Feed conversion ratio	3.00	2.96	3.36	3.34
Average daily intake (kg)	2.28	2.38	2.50	2.54

Table 3. Summary of the infectious pneumonic data.

Traits	Treatment I	Treatment II
	(Tylan S)	(Lincomix S)
Number of animals	13	13
Number of animals affected to mycoplasmal pneumonia	2 (15.38%)	1 (7.69%)
Pneumonic area (%)	25	10
Number of animals affected to bacterial pneumonia	7 (53.85%)	9 (69.23%)
Pneumonia area (%)	70.00	70.42
Number of infected animals	9 (69.23%)	10 (76.92%)
Number of normal animals	4 (30.77%)	3 (23.08%)
Weight at 90 feeding days (kg)	96.81	98.38

The number of hogs affected to both mycoplasmal and bacterial pneumonia in treatment I and II were 9 (69.23%) and 10 hogs (76.92%) with pneumonic area averaged 70% (30-90%) and 70.42% (30-95%) respectively. The virulences of infectious pneumonia are presented in Table 3.

No significant differences due to the prevention of respiratory diseases, types of infection pneumonia and pneumonic area were found between both treatments.

However, the remarkable efficiency of both feed additives are not dominantly shown. Further study, therefore should be made in order to answer the questions that what is (are) the real doses of both feed additives should be added? How long do these feed additives should be used? These real basic studies needed to be found out for establishing the infectious pneumonia prevention program in general piggeries.

REFERENCES

- Belschner, H.G. (1976). Pig diseases. Revised ed. 1976. John Sands Pty Ltd Halstedad Press Division, AUSTRALIA.
- Bruner, D.W. and Gillespie, J.H. (1973). Hagan's infectious diseases of domestic animals. 6th. ed. Cornell University Press. Ithica, USA.
- Dunne, H.W. (1970). Diseases of swine. 3rd ed. The Iowa State University Press. Ames, Iowa, USA.
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