Many antibacterial have been added to rations for growing pigs in order to increase their daily weight gain and improve their efficiency. Such substances are considered to be growth promoters in general they reduce the adverse bacterial population in the gut thus improving the absorption of nutrients. Experience carried out so far have shown that increased cestosorption causes a change in the morphology of intestinal villi. It was also found that the addition of Zine Bacitracin 100 ppm reduces the number of oxytetracycline resistant - Escherichia coli in pig faeces, and that transferrance resistance to this antibiotic was lower in the group receiving Zine Bacitracin (Walten, 1975).

Zine Bacitracin added to diets for pigs over 20 kg induced the growth rate by 1.1% and feed efficiency by 6% compared against control animals (Livingstone, 1967). With the addition of virginiamycin and tylolcin, 9.4% and 7.5% improvement in piglet growth rate was obtained respectively, as well as better feed efficiency compared against control animals (He Wille and Vanchoobrouck, 1971). The performance of young pigs improved - muscle development, namely clear ones - (Lorandifszics Daroczi, compared with dark one (Willy, 1967)).

The purpose of this trial was to compare Zine Bacitracin at 20, 50, 100 ppm, added to rations for growing pigs from 25 kg to slaughter.

40 pigs, Hampshire and Landrace cross, were divided into four treatment groups of 10 animals each. A 4 x 3 factorial system, 4 treatments and 3 replicates, was used. The pigs performances were evaluated from an average starting weight of 24.6 ± 0.4 kg. up to 39 ± 0.5 kg. (Period A); on 211 an intermediate weight of 36.5 ± 0.5 kg. (Period B); and afterwards up to 105.5 ± 0.5 kg. (Period C), when the animals were sacrificed. Food was given in a pelleted form and was distributed in automatic feeding troughs, that is "ad libitum", and so was the water contained in nipple drinking troughs.

Four treatments were chosen and numbered:
1) Control lot (20); 2) 50; 3) 100 ppm and 4) Zine Bacitracin Bacitracin. A study of the results obtained indicates that during the growing period, from 24 to 39 kg. average weight - animals in lots 20 and 25 got an extra daily weight gain 8.2% and 6.3% respectively, and statistically significant difference.

Comparing the results of lots 20 and 25, we notice that while there was a difference of 2.2 g. mean daily gain in lot 20, feed - efficiency by 1% in the same lot was improved by 15% with a lower feed consumption then in lot 20.

During period B, lot 25 had the highest weight gain and the highest feed consumption, this was due to a 9%, 7.5% and 7.6% above the other lots. However, the loss in feed efficiency was reduced to other lots.

During period C, the highest daily gain was obtained by lot 100, exceeded lot 20 by 45% and was considered to be the best possible feed efficiency for this variable - and 7.5% by 7.3%. Feed efficiency in lot 25 was improved by 10% and 15% compared to lots 1, 100 and 200 respectively. Zine Bacitracin consumption during the different periods studied increased proportionally, i.e. in lot 20 77% and 306% of metabolic weight gained during periods 20 and 30, this being directly related to consumption increase as the animals grew. This trend is also noticed in the reading two treatments but it should be pointed out that in spite of an increased antibiotic content in the diet by 10% and 15% for lots 20 and 100, the difference in antibiotic required to obtain 1 kg. of weight 7 1% increase during each one of the three periods is inversely proportional to the Zine Bacitracin increase in the diet.

Comparing these results with those obtained by Brown, 1970, who found an improvement in feed efficiency of 2.7%, 5.2% and 7.5% for treatments including 20, 50 and 100 ppm. of Zine Bacitracin, we notice that they are only coincident as refer to 20 where a 2% improvement in total feed efficiency was obtained. Our results were better for 50%, with 15% average improvement obtained, and poorer for 100 with 2.6% improvement. It should be taken into account that these results might differ from those obtained in high contamination establishments for, according to reports by Sherman and Peters, 1971, mentioned by Tounsiut, 1978, there exists a 14% positive difference in daily gain between conventional and low contamination establishments. There was a decrease in the dorsal fat thickness of those animals receiving Zine Bacitracin compared with control lot representing 0.4%, 10.8% and 5.6% for lots 20, 50 and 100 respectively. In view of the above difference without a decrease in the growth rate as happens when restricted exo-ecaline feeding systems are used (Bolad et al., 1976; Barber et al., 1972; Dimou et al., 1968), we think these results could be related to the proven ability of some antibiotics like virginiamycin and oxytetracycline to promote muscle growth, as it was found that the development of giant muscle cells as favored through the addition of sodium chloride (Tounsiut, 1979)


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