

TECHNICAL BULLETIN

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Orego-Stim[®] Improves Performance and Profits in Finisher Pigs During the Withdrawal Period

Introduction

In grower-finisher pigs, respiratory signs are the most common observation (APHIS USDA, 2008) and due to the obvious clinical signs of respiratory disease, control and prevention of respiratory disease complexes become the main focus in grower-finisher pigs. However, because of this, chronic subclinical enteric diseases do not get the attention that they deserve until clinical signs are observed, or days-to-market are prolonged. Although this may not lead to death, these apparently healthy pigs do not gain weight well enough. When pigs do not grow as expected they represent lost income for the farm and serve as a source of frustration to the farmers.

According to a study conducted by the USDA's National Animal Health Monitoring System (APHIS USDA, 2008) on swine health and management practices, the most common antimicrobials administered via feed to grower-finisher pigs were chlortetracycline (52.6% of sites), tylosin (44.2% of sites), and bacitracin (29% of sites). Most antibiotics however, have a withdrawal period whereby approximately in the last month pre-slaughter, their inclusion has to be stopped. This leaves the pigs vulnerable to diseases, either acute or sub-clinical. Instead of using chemotherapeutics, natural alternatives such as essential oils are now being considered as a potential and viable alternative for controlling diarrhoea, not only for their antibacterial properties, but also the metabolic properties, such as increasing digestibility and absorption of nutrients by 5% and increasing the weight of the litters by up to 18% (Costa, Salado, Medel & Asensio, 1999, cited in Penalver, Huerta, Carmen, Astorga, Romero & Perea, 2005). Penalver *et al.* (2005) conducted a study to evaluate the antimicrobial activity of five essential oils against origin strains of the *Enterobacteriaceae* family and found that certain essential oils show better antimicrobial activity than others.

Orego-Stim[®] is a 100% natural essential oil product containing not less than 35 different active components although its key components, carvacrol and thymol makes up slightly more than 80% of the total oil content. This is what makes Orego-Stim[®] advantageous compared with only a mixture of carvacrol and thymol as according to previous studies by Lattaoui & Tantaoui-Elaraki (1994) on a mixture of different components, it is suggested that molecules contained in very low percentages could play an important role in the antimicrobial activity.

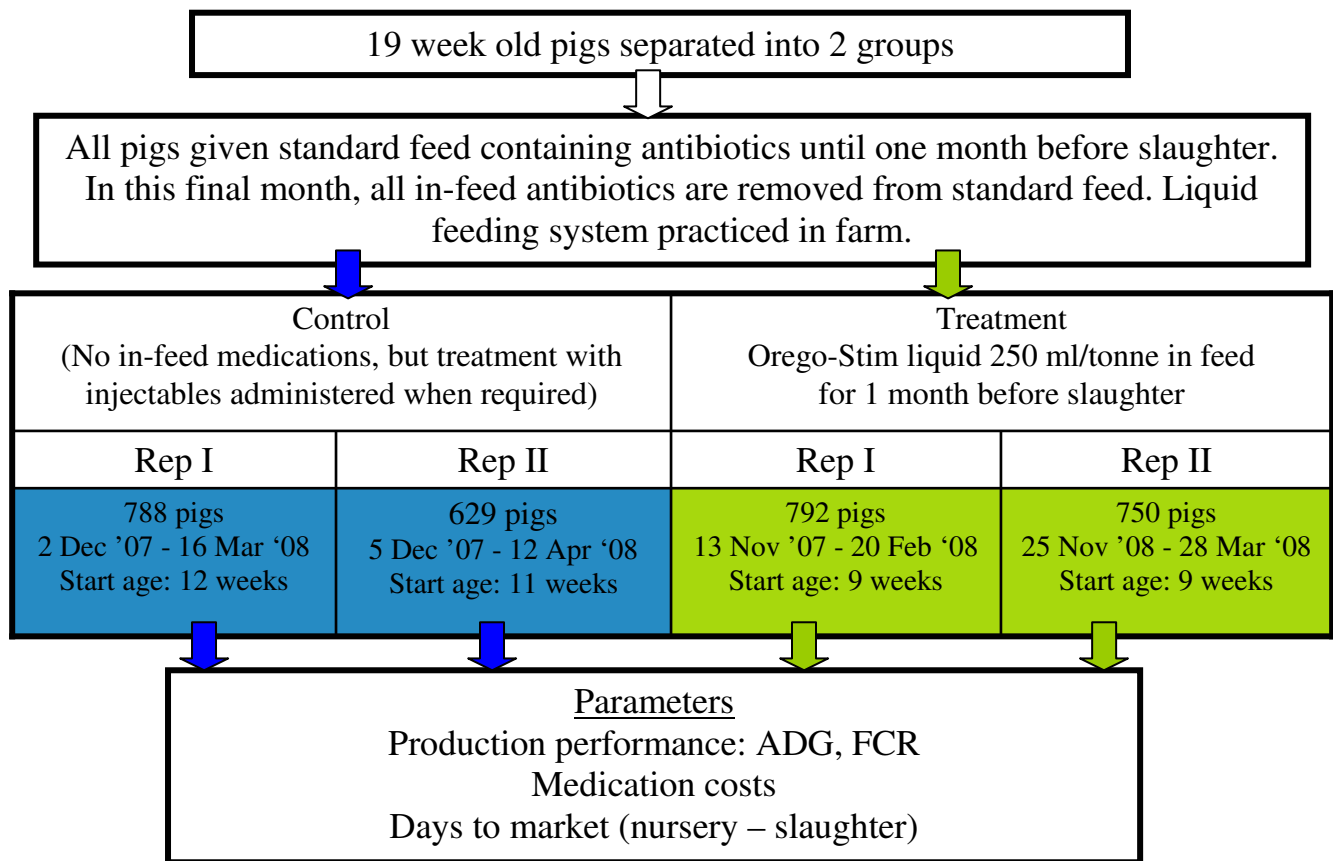
This trial was conducted by one of the top listed integrators in Thailand using Orego-Stim[®] for finisher pigs in the last month prior to slaughter. As part of their corporate responsibility to adhere to strict

antibiotic usage laws, in-feed antibiotics are removed during the last month prior to slaughter. Therefore instead of exposing the vulnerable pigs to a lack of protection in the last month of production, Orego-Stim[®] was used.

Materials and methods

The trial was conducted in four different batches of pigs in the same farm so that there would be with two replicates for both the control group and the Orego-Stim[®] group. The trial design is shown in Figure 1.

Figure 1: Trial design



Results

The effect of Orego-Stim[®] was examined by comparing the production performance of pigs given Orego-Stim[®] with the control group which contained no antibiotics or performance enhancers. Both replicates showed that the group given Orego-Stim[®] had an average of 5.12% improvement in terms of average daily gain, with an average additional daily gain of 31g compared to the control group.

Figure 2: Average Daily Gain (g)

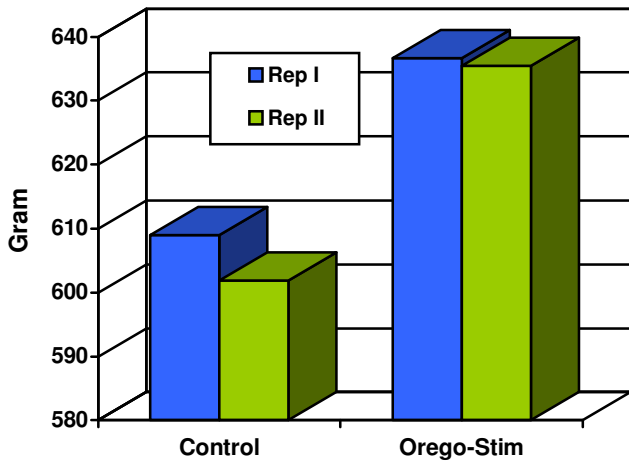
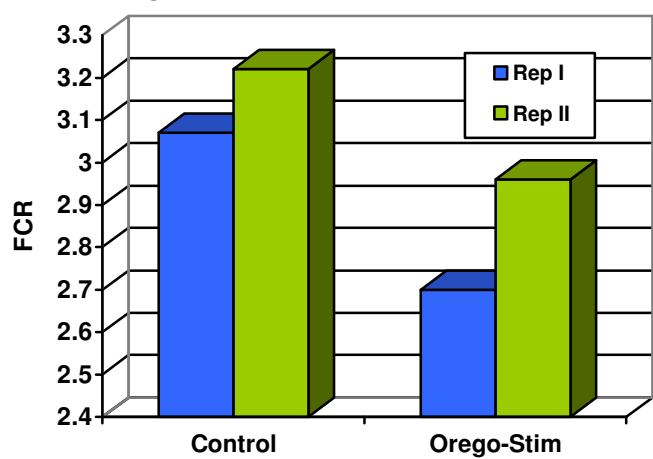


Figure 3: Feed Conversion Ratio

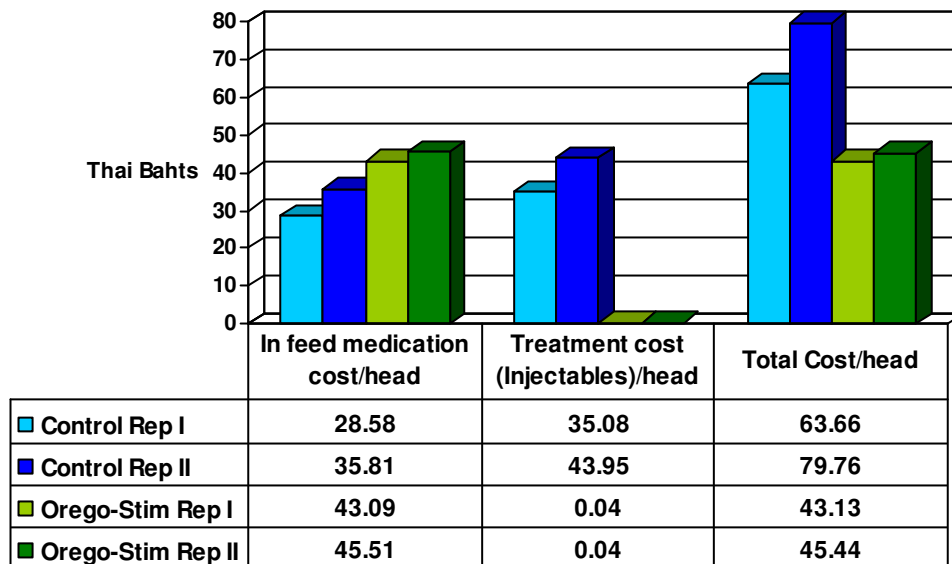


This translates to an average of 10.9% improvement in FCR, with the control group having an average FCR of 3.15 and Orego-Stim[®] group with an average FCR of 2.84, indicating an average reduction of 31 points (Figure 3).

As expected, from the higher growth rates, the pigs given Orego-Stim[®] were able to achieve desired body weight earlier, resulting in a lower number of days-to-market by an average of 5.5 days.

From the perspective of medication cost per head, this trial revealed that the cost of in-feed medication per head was lower in the control group. This was due to the exclusion of in-feed antibiotics in the final month of production as opposed to the Orego-Stim[®] group, where for the latter, Orego-Stim[®] was included in the feed during the last month. However, the cost of treatment per head was significantly higher in the control group while pigs in the Orego-Stim[®] group did not require any treatment at all. This meant an almost zero treatment cost for this group. When the cost of in-feed medication and treatment were totaled, the additional in-feed medication cost in the Orego-Stim[®] group became negligible, as the total cost for this group was now 32-43% lower than the control group.

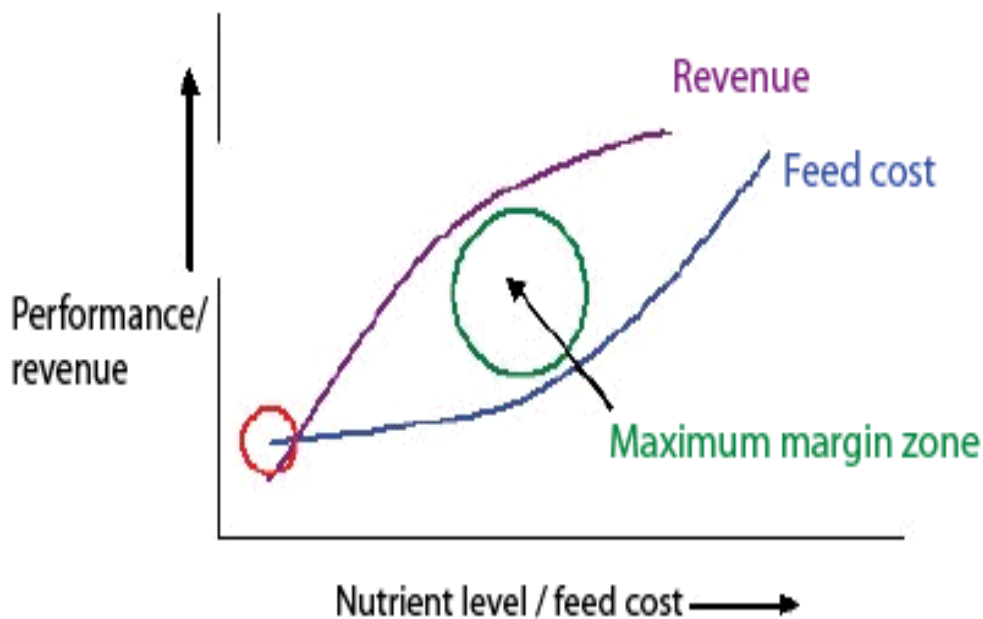
Figure 4: Medication Cost/Head



Conclusion

With the rocketing feed prices these days, most producers are looking for ways to minimize feed cost. However in doing so, it is vital that one realizes the importance of appreciating the effect on margin. The chart below shows that as nutrient level increases, feed cost per pig increases. However, as a result of improved pig performance the revenue from the pigs also increases, leading to an improved margin over feeding cost. It is obvious from the chart below that the maximum margin is not generated by minimising feed cost (indicated by the red circle), but rather it is attained at the point where the difference between revenue and cost is greatest (indicated by the green circle).

Figure 5: Cost vs Margin



Source: Aviagen 2007

Here, although the cost of in-feed medication may be higher with the inclusion of Orego-Stim[®], savings can be obtained through almost zero treatment costs. The non-requirement of treatment in the Orego-Stim[®] group also indicates that the pigs are at peak health and free of any clinical disease. This is also evident through the more efficient feed conversion, improvement in average daily gain which subsequently led to fewer days-to-market. Therefore, economic advantages or cost savings can be gained through various aspects including a lower total medication cost, a more efficient feed conversion and fewer days-to-market.

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