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Effect of a phytogenic feed additive on growth performance of weaned piglets

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Phytogenic compounds have been considered as alternatives to antibiotic growth promoters, hence having gained increased attention in feeding programs for swine. These compounds are derived from aromatic plants, exerting different biological activities, including antimicrobial, antiviral and antioxidant effects. The *in vivo* effects of phytogenic compounds include a stimulation of voluntary feed intake, increase in weight gain and reduction in feed/gain ratio (Sulabo et al., 2007). More recently, effects on gut microflora, intestinal biogenic amines and ammonia, as well as lymphoid tissues and immune response were reported in weaned pigs (Kroismayr et al., 2008).

The aim of this study was to determine the effects of a phytogenic feed additive based on oregano, anis and citrus essential oils and fructo-oligosaccharides (Biomim[®] P.E.P. 125) on performance of weaned piglets fed cereal-based diets without antibiotic growth promoters. The trial was carried out at the experimental station of Primex S.A.S., Languidic, France.

Two feeding experiments were carried out with 168 piglets (Adenia × Pietrain) in total. Piglets were 42 days old at the beginning of the experiment. In each trial piglets were equally assigned to 14 floor pens of the experimental house. There were six piglets in each pen, resulting in 42 piglets per treatment. The treatments were: (1) Control and (2) Control + Phytogenics. Piglets in the Control Treatment 1 were fed a starter diet based on wheat, barley and soybean meal. Piglets in treatment 2 were fed the basal diet supplemented with the phytogenic feed additive Biomim[®] P.E.P. 125 in a dosage of 125 g/t. Diets were manufactured in the same feed mill with the same batches of raw materials. The control diet was manufactured first in order to avoid any carry-over of the test

product in the control diet. Feed and drinking water were provided *ad libitum*. Initial body weight (BW) was 12.4 and 12.5 kg in Trial 1 and 2, respectively, and did not differ ($P > 0.05$) between treatments.

In Trial 1 final BW was 23.0 and 23.5 kg ($P > 0.05$), average daily weight gain (ADG) was 535 and 555 g ($P > 0.05$), and feed intake was 783 and 790 g ($P > 0.05$) in Treatment 1 and 2, respectively. Feed conversion ratio (FCR) was 1.47 and 1.42 ($P > 0.05$) in Treatment 1 and 2, respectively.

In Trial 2 final BW was 22.9 and 23.4 kg ($P > 0.05$), ADG was 525 and 547 g ($P > 0.05$), and feed intake was 804 and 777 g ($P > 0.05$) in Treatment 1 and 2, respectively. FCR was 1.53 and 1.42 ($P < 0.05$) in Treatment 1 and 2, respectively.

On average of both trials, inclusion of the phytogenic feed additive increased ($P = 0.07$) final body weight and ADG ($P = 0.02$), and improved ($P = 0.02$) FCR. ADG was 527 and 555 g in Treatment 1 and 2, respectively. Average daily feed intake was 793 and 783 g ($P > 0.05$), and FCR was 1.50 and 1.42 ($P = 0.02$) in these treatments. This data confirms results from previous trials with weaned piglets fed the same phytogenic feed additive (Sulabo et al., 2007; Kroismayr et al., 2008).

In conclusion, addition of the phytogenic feed additive in starter diets for piglets at the age of 42 to 62 days significantly improved body weight gain and feed conversion. Therefore, phytogenics are regarded as potential performance enhancers in feeding programs for weaned pigs fed diets without antibiotic growth promoters.