

## Effects of $\beta$ -Glucan on Growth Performance and Immunomodulation in Weaned Piglets

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### Abstract

Seventy-four weaned piglets were used in a 6-week experiment to determine the effects of  $\beta$ -Glucan on growth performance and immunomodulation of weaned piglets. Piglets were randomly chosen and divided into control and treatment groups. Body weight gain and feed consumption were recorded at weeks 2, 3 and 6. The immunomodulatory effects of  $\beta$ -Glucan were determined by gross examination of lung lesions during post mortem. Weaned piglets from the treatment group had overall greater growth performance compared to the control group. This was also evident from the overall higher body weight and percentage of body weight gain as well as a lower feed conversion ratio. The fecal coliform count also implied that fecal coliform count in the treatment group was lower than the control group. Piglets treated with  $\beta$ -Glucan were observed to have positive immunomodulatory effects on piglets. This was shown by an overall lower lung lesion score in the treatment group. The post mortem revealed 2 piglets with fibrinous pneumonia (APP) and 1 pig with severe atrophic rhinitis (Grade 5). In conclusion, treatment with  $\beta$ -Glucan may lessen inflammatory response towards Gram negative bacteria via the inhibition of inflammatory cytokines and promote the production of anti-inflammatory cytokines. Further studies are needed to determine the efficacy of  $\beta$ -Glucan in reducing total coliform count and its effect on immunomodulation.

**Keywords:**  $\beta$ -glucan, growth performance, immunomodulation, piglets