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Czech Journal of Animal Science

Inclusion of yeast-derived protein in weanling diet improves growth performance, intestinal health, and anti-oxidative capability of piglets

Hu L., Che L., Su G., Xuan Y., Luo G., Han F., Wu Y., Tian G., Wu C., Fang Z., Lin Y., Xu S., Wu D.:

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The effects of yeast-derived protein (YP) on growth performance, intestinal health, and oxidative status of weanling piglets

were investigated. A total of 80 weaned piglets (PIC 327 × 1050, 26 ± 2 days old, 6.20 ± 0.10 kg) were randomly allocated into 2 groups, 5 pens per each group and 8 piglets per each pen, receiving control diet and diet with inclusion of 4% YP at the expenses of fish meal (YP diet) for a period of 28 days. The diets were formulated to contain similar nutrient levels. Compared with control, piglets fed YP diet had markedly higher overall average daily growth (+14%, $P < 0.05$) and lower final feed conversion ratio (-8%, $P < 0.01$). Concentrations of serum serine, cystathionine, histidine, hydroxyproline, and urea were decreased in piglets fed YP diet ($P < 0.05$), whereas alanine and aspartate were increased ($P < 0.01$). Moreover, serum antioxidant enzyme activity (glutathione peroxidase) was markedly increased (+19%, $P < 0.01$) in piglets fed YP diet relative to piglets fed control diet. In addition, feeding YP diet considerably ($P < 0.05$) increased the copy numbers of lactobacilli and total bacteria in the colon of piglets at the end of the experiment. Furthermore, the mRNA abundance of innate immunity-related genes (*TLR4*, *NF-κB1*, and *IL-6*) was increased ($P < 0.06$) in the

ileum of piglets fed YP diet. Collectively, results of this study indicated that diet with the inclusion of YP improved growth performance and partially enhanced anti-oxidative capability as well as intestinal innate immunity of weaning piglets.

Keywords:

yeast; swine; nucleotide; immune; oxidative stress

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