



Effect of dietary fumonisin B₁ on certain immune parameters of weaned pigs

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ABSTRACT

There are only a few data available on the effect of fumonisins on immune response. The aim of the present study was to examine whether dietary fumonisin B₁ (FB₁) has any effect on the humoral and cellular immune response in weaned pigs, depending on dose and time of toxin exposure. Twenty weaned pigs of approximately 12-14 kg body weight were used. In the 1st experiment the piglets were divided into four groups (n=5). In the 2nd experiment two groups (experimental group, n=14 and controls, n=6) were formed. Fusarium moniliforme fungal culture containing a known amount of FB₁ was added to the experimental animals' diet to ensure FB₁ intake of 1, 5 and 10 ppm (1st exp.), or 100 mg per animal per day (2nd exp.) In order to determine immune response animals were vaccinated against Aujeszky disease with inactivated vaccine (Aujespig K). Specific and non specific in vitro cellular immune response was measured by the lymphocyte stimulation test (LST). In order to investigate non specific cellular immune responsiveness, blastogenic transformation of lymphocytes was induced by PHA-P, ConA and LPS. Specific cellular immune response was induced by the inactivated suspension of the Aujeszky virus. Humoral immune response, e.g. specific antibody titre was measured by virus neutralisation test. None of the immunological parameters examined showed significant differences between groups. It could be concluded, that fumonisin B₁ had no significant effect on the humoral and cellular specific and non specific immune response when fed in high dose (100 mg/animal/day for 8 days), or in low concentration even for a longer period (1, 5 and 10 ppm for 3-4 months).

(Keywords: fumonisin B₁, immune response, lymphocyte stimulation test, pig)

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