

INFLUENCE OF PHYTONUTRIENT “VITASTIM” ON CHICKEN MUCOSAL IMMUNITY AFTER INFECTION WITH LOW-PATHOGENIC AVIAN INFLUENZA VIRUS

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Poultry production now is rapidly developing and needs of modern veterinary software. The presence of accelerated evolutionary processes resulted in a complication of the epizootic situation, increasing the pathogenic properties of the pathogens, the spread of infectious diseases. Immunostimulation is widely used in infectious disease. There is used the adjuvants of different origin. They are valuable way to improve the immune status of the avian organism and enhance the immune response during vaccination. Search for new immunostimulating preparations continues to view ever-increasing requirements regarding their safety, effectiveness, and accessibility. The aim of our study was to investigate the immunostimulatory effect of phytonutrient “Vitastim” on the immune response after avian infection with LPAIV.

It was investigated immune response at chicken after infection with highly pathogenic avian influenza virus A/mallard/Ukraine/2007 H5N2 followed by phytonutrient “Vitastim” drinking using immunohistochemical method (LSAB). It was studied dynamics of CD4, CD8, IgM, IgG, IgA accumulation in spleen, caeca, trachea, lung on 1st, 3rd, 5th, 7th, 10th, 14th, and 21st dpi.

By the results of immunohistochemical researches of influence of immunostimulating phytonutrient “Vitastim” on organism of chickens there was determined that given preparation more actively influence on humoral immune response in norm and at lowly pathogenic avian influenza (caeca, trachea, lungs) that testified more intensive formation and accumulation of B-lymphocytes which produce immunoglobulins (Fig. 1, 2). At research of spleen there was determined amplified proliferation of T-lymphocytes, macrophages that characterize the activation of cell immune reaction. The investigations of 7 clusters of immunocompetent cells that allow to determine immune response on the stage of early direct influence on agents –CD8, on the stage of cooperation and transmission of antigenic products –CD4, on the stage of its processing and presenting – macrophages and IgG, IgM and IgA.

We have established immunostimulating effect of phytonutrient “Vitastim” that can be recommended to apply it in order to stimulate the immune response of poultry, as well as the drug-support for animal immunization against infectious diseases.

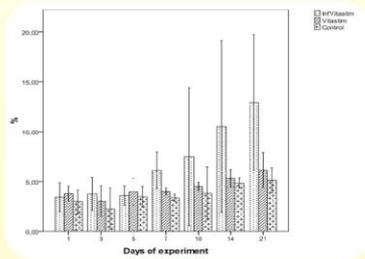


Fig. 1. Dynamics of IgA changes in chicken caeca after after phytonutrient “Vitastim” feeding. Each bar represents the accumulation of cells in the immune process dynamics since 1st to 21st days after phytonutrient administration. Significant stimulating influence of phytonutrient “Vitastim” on immune response against LPAI (especially in chickens infected with LPAIV + phytonutrient “Vitastim”) is shown since 7th day. Statistical analysis was performed by comparing cell amount in caeca of chickens infected with LPAIV + phytonutrient “Vitastim” (InfVitastim), phytonutrient “Vitastim” feeding (Vitastim) with control birds

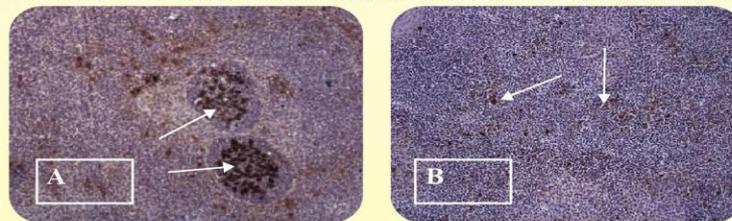


Fig. 2 IgG aggregates in chicken spleen on 14th day after infection with LPAIV + phytonutrient “Vitastim” (A). Arrows show on cell aggregates in the form of conglomerates and dots of brown color. It is shown an immunostimulative influence of phytonutrient “Vitastime” that proved by intensive accumulation of IgG in germinative lymphoid follicles as compared with control (B). LSAB-method, × 200