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ACUTE PHASE PROTEINS IN LAYING HENS FOLLOWING (1→3),(1→6)-BETA-D-GLUCAN SUPPLEMENTATION OF FEED.

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Introduction: Growing and laying chickens are subjected to severe stress and increased susceptibility to infectious challenges under the contemporary high-density confinement-rearing. Continued high morbidity and mortality warrants research emphasis on optimising immune response.

Aim: This intervention study was inaugurated by an interest to quantify dietary modulation of cellular and humoral measures of immunity in circulating blood, egg production, and mortality rates of hens. The feed was supplemented with the immunomodulator (1→3),(1→6)-beta-D-glucan to verify its effect on acute phase proteins and other objective measures of health.

Methods: 78,600 laying hens (control group) were fed the standard diet, 237,300 hens (experimental group) were fed during seven weeks the same diet supplemented with 2 g Leucogard[®]H per kg feed. This product is a cell wall fraction from pure yeast of *Saccharomyces cerevisiae* and it is commercially supplied by Fibona Health Products GmbH Wiesbaden. Blood samples were taken from 15 chickens of each group at 7, 14 and 47 days after beginning of experimental feeding.

Results: In the control group the mortality rate is 53% higher; the egg production in the experimental group exceeds that in the control group by 4.3% ($p < 0.001$). The animals in the experimental group differ from the controls by higher counts of leukocytes and lymphocytes in blood, higher concentrations of albumin, alpha(2)-globulin, alpha(1)-antitrypsin, Immunoglobulin G, and gamma-Globulin.

Conclusion: Cellular and humoral measures of immunity in circulating blood including acute phase proteins of laying hens correspond with rates of mortality and rate of egg-production. Immunomodulation by dietary (1→3),(1→6)-beta-D-glucan improves immune defence and laying performance.