The influence of administering “effective microorganisms” to pullets on chosen haematological and biochemical blood indexes

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Abstract

“Effective Microorganisms” (EM) – a mixture of lactic acid bacteria, photosynthetic bacteria, yeasts and fungi are used mainly in agriculture and organic waste treatment. Recently, they have also been added to water and feed for animals, as well as to processing their excrements into compost and to eliminate the stench. The objective of the present study was to assess the influence of a 14-day administration of an EM solution in drinking water to layer hens on chosen haematological and biochemical indexes. The research was carried out on 120 hens divided into two equal groups. The birds in the experimental group were given drinking water with dissolved EM (5% solution), and those in the control group – water without the preparation. On the 64th day of the aviculture, the hens were weighed and their blood was taken from the wing vein for haematological and biochemical examinations. Administering EM with water to hens did not influence significantly their body weight nor chosen haematological and biochemical indexes. A significant increase was found only in the number of platelets, the level of albumins, the content of total cholesterol and the LDH activity, however, a decrease in the ALT activity was observed.

Key words: hens, effective microorganisms, haematological and biochemical indexes

Introduction

In breeding poultry and pigs there are various types of live microorganic cultures applied, including probiotics (preparations containing one or more types of bacteria), prebiotics (preparations containing nutrients facilitating the development of intestinal bacteria), synbiotics (preparations containing probiotics and prebiotics), natural gut flora (NGF; a mixture of relative or obligatory anaerobes, originating from healthy adult hens free from pathogenic microorganisms, the quality of which is under control) (Alexopoulos et al. 2004, Szeleszczuk 2005a,b, Wang et al. 2009).

The preparation called “Effective Microorganisms – EM” has been developed by Professor Teruo Higa from the University of the Ryukyu (Okinawa) in Japan. It contains circa 80 types of microorganisms that can be numbered among the following groups: photosynthetic bacteria, lactic acid bacteria, yeasts, ac-