The number of human cases of salmonellosis in the EU was 94,625 in 2015. Considering the source of these infections, *Salmonella* spp. was most frequently detected in broiler chicken meat and *Salmonella Enteritidis* (SE) was the most commonly reported serovar. The efficacy of probiotics in limiting *Salmonella* spp. infection in poultry has been demonstrated in numerous papers. The administration of probiotics at the level of primary production reduces the risk of contamination of poultry food products with *Salmonella* spp.

A study was carried out in order to determine the potential for reducing the *Salmonella* spp. population in broiler chickens with the use of the Lavipan (JHJ, Poland) probiotic that comprised selected strains of lactic acid bacteria and *Saccharomyces cervisiae*. *Salmonella* spp.-free broiler chickens were divided into two groups and received the same feed with (group L) or without (group C) the probiotic throughout the experiment. All day-old chickens were infected *per os* with SE. Samples of cecum content were collected 2, 4, and 6 weeks after SE infection and pectoral muscles were collected 6 weeks following SE infection for the evaluation of the SE population number. Serum samples for serological examinations were collected 6 weeks after infection.

Six weeks after infection, the number of SE-positive cecal samples was lower in the L group (12.5% positive) in comparison to the C group (87.5%). Similar results were demonstrated for the muscle samples (25% in contrast to 87.5%). At the same time, in both cases, the SE CFU/g was significantly lower in the L group. The results of our study indicate that Lavipan was capable of reducing the population of SE in the gastrointestinal tract, which eventually improved the hygienic parameters of the pectoral muscles.

Four weeks after infection, SE was not detected in any of the experimental groups. In both groups, no specific anti-SE antibodies were detected.

**Key words**: chicken, probiotic, *Salmonella Enteritidis*, serological response