

News & Comments

Agents that Affect the Immune Response of Broilers*Tanveer Ahmad*

Numerous commensal microbes reside in the digestive tract of chickens, making it a special organ that can perform digestion and food absorption while remaining tolerant of commensal bacteria and self-antigens and triggering immune responses against pathogenic germs. For a few million years, microbes and hosts have coexisted and evolved in a harmonious mutualism. According to the author, the host gives the commensal microorganisms with plant polysaccharides and host-derived glycans, and in exchange, the commensal microbes give the host energy by digesting these non-digestible carbohydrates. Numerous studies have demonstrated that intestinal probiotics (such as Ruminococcaceae and Lachnospiraceae) are associated with the health of broilers' guts and that a larger abundance of these helpful bacteria can lower the number of harmful bacteria in the intestine. The article was published in Science Direct where the authors were, Q. Wang, X. F. Wang, y T. Xing and others. The Nanjing Agricultural University Institutional Animal Care and Use Committee gave its approval to the experiment. A total of 240 Ross 308 chicks that were one day old and had a similar body weight were chosen. According to the author, numerous studies have demonstrated that probiotics, organic acids, and feed enzymes can easily alter the complex gut microbiota and its metabolites, which can affect the immune system and intestinal barrier function. In the present investigation, neither dietary CTC nor XOS administration changed the diversity of the microbial communities in the cecum, but they did change the relative abundance of some taxa, like the genera *Negativibacillus* and *Bacteroides*. Accordingly, 2 g kg⁻¹ XOS therapy enhanced the percentage of the *Lactobacillus* genus in the cecal fluid of broiler chickens. Unexpectedly, we discovered that the percentage of *Lactobacillus* and *Bifidobacteria* genus was less than 1% and was consistent throughout all 5 treatments, which may suggest that the 100 mg kg⁻¹ XOS treatment was insufficient to accomplish the desired results. Broiler chickens' immunity and antioxidant capacity can be improved by the addition of XOS, IAPS, and XOS+IAPS to their feed. XOS+IAPS can give birds a better redox environment and a more complete mucosal immune barrier function than XOS or IAPS can. Additionally, XOS+IAPS can boost the number of bacteria that produce SCFA, which prevents the growth of dangerous bacteria and promotes a healthier intestinal microecology. These findings suggested that the inclusion of XOS and IAPS in CTC-free meals may enhance the immune and digestive health of broilers.

KEYWORDS

Broiler, xylooligosaccharides, gamma-irradiated astragalus polysaccharides, immune response

