



Effect of encapsulated microalgae (*Spirulina platensis*) in the poultry industry

Shakoori M.^{1*}; Safari R.¹; Afraei M. A.¹; Gholipour H.²

1-Caspian Sea Ecology Research Center, Iranian Fisheries Science Research Institute, Agriculture Research, Education and Extension Organization, Sari, Iran

2-Department of Animal Science and Fisheries, Sari Agricultural Sciences and Natural Resources University, Sari, Iran

*Corresponding author's email: matin.shakooi@yahoo.com

Abstract

This study was done to evaluate the effect of encapsulated microalgae (*Spirulina Platensis*) on antioxidant status and some blood parameters in broiler chicks for 42 days. A total of 320 one-day old broiler chicks (male sex) Ross 308 strain was divided to 8 treatments, 4 replicates (10 chicks in each replicate) in a completely randomized design. Experimental diets included control diet (with no additive, negative control), antibiotic (positive control), 3 levels of spirulina powder (0.33, 0.66 and 1 percent), and 3 levels of encapsulated spirulina powder (0.33, 0.66 and 1 percent) that were fed to birds from 1 to 42 days of age. Results showed that blood superoxide dismutase activity increased in chicks fed with encapsulated *Spirulina* powder and *Spirulina* powder at the level of 1 percent ($P < 0.05$). But the concentration of catalase and glutathione peroxidase enzymes did not show any significant difference ($P > 0.05$). Use of encapsulated *Spirulina* at the level of 0.66 and *Spirulina* powder at the level of 1 percent decreased blood cholesterol and triglyceride concentrations at 42d in broiler chicks ($P < 0.05$). In conclusion, using dietary *Spirulina* could improve antioxidant status and some blood parameters in broiler chicks.

Keywords: *Spirulina*, antibiotic, encapsulated, broiler chicks