EFFECT OF REPLACING INORGANIC TRACE ELEMENTS WITH ORGANIC MINERALS (BIO-PLEX) ON PERFORMANCE OF COMMERCIAL BROILERS

S.A.C.V. Senanayaka[1], S.S.P. Silva[2] and Sujatha Premaratne[1]

[1]Dept. of Agricultural Systems, Faculty of Agriculture, Rajarata University of Sri Lanka, Puliyankulama, Anuradhapura, Sri Lanka.
[2]Veterinary Research Institute, Gannoruwa, Peradeniya, Sri Lanka.

Trace elements fulfill specific physiological and biological functions in the body and deficiency leads to disturbances in many metabolic processes. Bio-availability of inorganic trace elements has been a concern and it is believed that organic sources can be more absorbable. In Sri Lanka, most of the trace minerals in poultry feeds are derived from inorganic sources. However, the ability of organic trace minerals to replace inorganic elements in poultry feeds has not been assessed under local conditions. Therefore, in this study, effect of substituting inorganic trace elements with organic trace elements was studied in broiler chickens. Proprietary trace mineral premix, "Bio-plex", in two inclusions levels (500 g per ton or 750 g per ton), was used as an organic trace element supplement and was compared with commonly used commercial inorganic trace element mixture (1000 g per ton). One thousand two hundred day-old broiler chicks were allocated into 15 equal pens equipped with a brooder, lights, waters and feeders. Birds were randomly allocated in a completely randomized design with five replicates to test three experimental diets; Diet 1 (Control)-inorganic trace elements 1 kg/ton; Diet 2-organic trace elements, 500 g/ton; Diet 3- organic trace elements, 750 g/ton of feed. Feed intake, body weight and mortality were recorded for 35 days, weekly. Body weights of chicks fed with organic minerals were significantly heavier ($p<0.05$) and feed conversion was better than that of control after seven days of feeding. However, there was no significant treatment effect on any of the parameter measured from day seven to end of the experiment on day 35. It is apparent that inorganic minerals can be successfully replaced with half a dose of organic minerals.

Key words: Broiler, Trace elements