

## A Review: Role of Chromium in Broiler

**Authors :** Naveed Zahra, Zahid Kamran, Shakeel Ahmad

**Abstract :** Heat stress is one of the most important environmental stressors challenging poultry production worldwide. The detrimental effect of heat stress results in reduction in the productive performance of poultry with high incidences of mortality. Researchers have made efforts to prevent such damage to poultry production through dietary manipulation. Supplementation with Chromium (Cr) might have some positive effects on some aspect of blood parameters and broilers performance. Chromium (Cr) the element whose trivalent Cr (III) organic state is present in trace amounts in animal feed and water is found to be a key element in evading heat stress and thus cutting down the heavy expenditure on air conditioning in broiler sheds. Chromium, along with other essential minerals is lost due to increased excretion during heat stress and thus its inclusion in broiler diet is kind of mandatory in areas of hot climate. Chromium picolinate in broiler diet has shown a hike in growth rate including muscle gain with body fat reduction under environmental stress. Fat reduction is probably linked to the ability of chromium to increase the sensitivity of the insulin receptors on tissues and thus the uptake of sugar from blood increases which decreases the amount of glucose to be converted to amino acids and stored in adipose tissue as triglycerides. Organic chromium has also shown to increase lymphocyte proliferation rate and antioxidant levels. So, the immune competency, muscle gain and fat reduction along with evasion of heat stress are good enough signs that indicate the fruitful inclusion of dietary chromium for broiler. This promising element may bring the much needed break in the local poultry industry. The task is now to set the exact dose of the element in the diet that would be useful enough and still not toxic to broiler. In conclusion there is a growing body of evidence which suggest that chromium may be an essential trace element for livestock and poultry. The nutritional requirement for chromium may vary with different species and physiological state within a species.

**Keywords :** broiler, chromium, heat stress, performance

**Conference Title :** ICSRD 2020 : International Conference on Scientific Research and Development

**Conference Location :** Chicago, United States

**Conference Dates :** December 12-13, 2020