

# **POULTRY**

## **Production and Management**

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## CHAPTER 8

### Strategic Management to Combat Heat Stress in Poultry Production

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#### ABSTRACT

*The effects of heat stress (HS) caused by high temperatures continue to be a global concern in poultry production. Poultry birds are homoeothermic; however, modern day chickens are highly susceptible to HS due to their inefficiency in dissipating heat from their body due to the lack of sweat glands. During HS, the heat load is higher than the chickens' ability to regulate it. This can disturb normal physiological functioning, affect metabolism and cause behavioural changes, respiratory alkalosis and immune dysregulation in birds. These adverse effects cause gut dysbiosis and, therefore, reduce nutrient absorption and energy metabolism. This consequently reduces production performances and causes economic losses. Several strategies have been explored to combat the effects of heat stress. These include environmentally controlled houses, provision of clean cold water, low stocking density, supplementation of appropriate feed additives, dual and restricted feeding regimes, early heat conditioning and genetic selection of poultry lines to produce heat-resistant birds. In which one best strategy is the probiotics are gaining the attention of poultry nutritionists, as they are capable of improving the physiology, gut health, and immune system of poultry under heat stress. Therefore, application of probiotics along with proper management are considered to potentially help negate some of the negative impacts of heat stress on poultry. Despite all these efforts, HS still remains a challenge in the poultry sector. Therefore, there is a need to explore effective strategies to address this long-lasting problem.*

**Keywords:** *Heat stress, poultry production, health, strategies high temperature.*

#### INTRODUCTION

The Indian poultry sector is characterized by its industrialization, faster growth in consumption and trade than any other major agricultural sectors in the world. India is the third largest egg producer and the six in poultry meat production in world (Economic survey 2023). In India, as poultry plays an important economic, nutritional and socio-cultural role in the livelihood of poor rural households. But looking at the present scenario, climate change is one of the most important environmental stressors challenging

