



**Haemocytes profile of Indian Honey bee *Apis indica* of District Amethi, Uttar Pradesh,
India**

Saleem Ahamad Khan¹, Rajneesh Tripathi²

Department of Zoology

Shri Jagdeesh Prasad Jhabarmal Tiberawala University, Jhunjhunu, Rajasthan, India

Abstract: The honey bee, *Apis indica* is a delicate and sensitive Hymenoptera insect, which has been domesticated for honey production and bee wax. Due to continuous domestication, this Indian bee becomes susceptible to various diseases. The insect immune response consists of two tightly interconnected components, the cellular and the humoral responses. The cellular response is mediated by haemocytes and involves responses such as phagocytosis, encapsulation, and clotting. During the course of infection the cellular defense mechanism is mediated by different types of haemocytes. Haemocytes are found circulating freely in the haemolymph or adhering to internal organs such as the fat body or the digestive tract of the insects. Different types of haemocytes were found in the haemolymph of insects as leucocytes and pycnonucleocytes' viz., prohaemocytes (PRs), plasmatocytes (PLs), granulocytes (GRs). The total haemocyte counts and the differential haemocyte counts vary in the different life stages. In the haemolymph of *Apis indica* free haemocytes contained PRs, PLs, GRs and a special type of cell in the females whereas the males of this species had only PRs and PLs. Haemocyte numbers in the hemolymph of any particular insect may vary depending on various factors, such as disease and meteorological factors, including altitude. The results show significant variations of different haemocyte in the various life forms of *Apis indica*. These investigations may be very useful in planning rearing strategies for commercial species of Honey bee.

Keywords: Haemocytes, Indian honey bee, *Apis indica*, Amethi, Uttar Pradesh, India.