

HEMATOLOGICAL VALUES OF THE INDIGENOUS CHICKENS

M. L. Sharmin and M. Myenuddin

Department of Physiology, Faculty of Veterinary Science, Bangladesh Agricultural University,
Mymensingh-2202, Bangladesh

ABSTRACT

Haematological study was conducted on forty indigenous chickens of either sex (20 male and 20 female), aged between 6 to 12 months old during the period from March to April 2003. The haematological values of Hb, TEC, TLC and PCV in male chickens were 9.48 ± 0.38 g%, 3.37 ± 0.30 $10^6 / \text{mm}^3$, 19.13 ± 0.43 $10^3 / \text{mm}^3$ and 33.05 ± 0.69 % and in female 8.29 ± 0.39 g%, 2.48 ± 0.25 $10^6 / \text{mm}^3$, 20.68 ± 0.54 $10^3 / \text{mm}^3$ and 31.20 ± 0.62 %, respectively. The MCV, MCH, MCHC of male blood were 99.22 ± 9.26 μ^3 , 28.22 ± 2.29 μg and 28.65 ± 0.86 %, respectively whereas in female were 128.55 ± 13.57 μ^3 , 34.06 ± 3.95 μg , 26.58 ± 1.33 %, respectively. Haematological parameters revealed significant differences between the male and female groups for TEC, Hb, PCV, TLC, MCV, MCH, MCHC, heterophil, eosinophil, lymphocytes and monocytes at $p < 0.01$ and for basophil at $p < 0.05$.

Key words: Heamatology, indigenous, chickens

INTRODUCTION

The haematological values can be used to evaluate the state of health of either a single bird or an entire population and would constitute a basic requirement for an indispensable preliminary knowledge of the biological material chosen for research. Haematology permits the study of specific pathological alterations of certain blood constituents and recognition under strictly controlled experimental conditions of the existence of metabolic alteration of different origin. Many factors can influence the level of a particular blood constituent. Haematological values of chicken are influenced by age, sex, breed, climate, geographical location, season, nutritional status, life habit of species and such other physiological factors (Dukas, 1955). So, the physiological values of chicken may likely be different. The values need to be compared during disease diagnosis and veterinary practices. The present research was under taken to know the normal haematological values of the indigenous chickens of Bangladesh.

MATERIALS AND METHODS

Haematological studies were performed as per method described by Coffin (1955) within two hours of blood collection from wing vein in double oxalate containing glass vials from forty apparently healthy indigenous breed of chickens of either sex (20 male and 20 female), aged between 6 to 12 months old of Mymensingh region over a period of 2 months from March to April 2003 and the values obtained were analyzed statistically for significant differences using Student's 't'-test (Snedecor and Cochran, 1980)

RESULTS AND DISCUSSION

The results of haematological values of indigenous chickens are presented in Table 1.

Table 1. Hematological parameter of indigenous male and female chickens (mean \pm SE)

Type of chickens	Hb (g%)	TEC ($10^6/\text{mm}^3$)	TLC ($10^3/\text{mm}^3$)	PCV (%)	MCV (μ^3)	MCH (μg)	MCHC (%)	DLC (%)				
								H	E	B	L	M
Male (n = 20)	9.48 ± 0.38	3.37 ± 0.30	19.13 ± 0.43	33.05 ± 0.69	99.22 ± 9.26	28.22 ± 2.29	28.65 ± 0.86	22.8 ± 1.06	3.15 ± 0.75	1.0 ± 0.00	62.0 ± 2.85	1.65 ± 0.49
Female (n = 20)	8.29 ± 0.39	2.48 ± 0.25	20.68 ± 0.54	31.20 ± 0.62	128.55 ± 13.57	34.06 ± 3.95	26.58 ± 1.33	19.4 ± 0.60	1.80 ± 0.52	0.85 ± 0.37	70.6 ± 0.88	2.75 ± 0.79
Level of Significance	**	**	**	**	**	**	**	**	**	*	**	**

**Indicates significant at 1% level, *Indicates significant at 5% level, H = Heterophil, E = Eosinophil, B = Basophil, L = Lymphocytes, M = Monocytes.

The haemoglobin concentration (Hb), total erythrocyte count (TEC) and packed cell volume (PCV) were significantly ($p < 0.01$) higher in male chickens than female (Table 1). Similar higher values were also reported by Oyewale (1987) in domestic fowl. Total leukocyte count (TLC) was significantly ($p < 0.01$) higher in female chickens which are not in agreement with the findings of Islam *et al.* (1999) who reported a slightly higher TLC in male than the female birds.

Differential leukocyte count (DLC) revealed that heterophil and eosinophil at $p < 0.01$ and, basophil at $p < 0.05$ were higher in male than the female chickens (Table 1). The values of lymphocytes and monocytes were significantly ($p < 0.01$) higher in female than the male chickens. The higher values of agranulocytes in female are not supported by the findings of other workers. The MCV and MCH values were significantly ($p < 0.01$) higher in female than male but MCHC value was higher in male than female. This finding coincides with the findings of Coffin (1955) and Sturkie (1965). Further study with large sample size is necessary to conclude the findings.

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