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Haematological reference intervals for cultured *Oreochromis niloticus* (Nile tilapia)

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Aquaculture of *Oreochromis* species commonly known as tilapia is affected by production related disorders and infectious diseases. Haematology can provide substantial diagnostic information once reference values are established. This study was, therefore, aimed at establishing haematological reference intervals for *Oreochromis niloticus* (Nile tilapia) cultured under local conditions.

Blood samples were collected from a total of 48 clinically healthy *O. niloticus* cultured in fibreglass tanks. Estimation of haematological parameters, viz., total red blood cell (RBC), total white blood cell (WBC), thrombocyte count, packed cell volume (PCV), haemoglobin (Hb) concentration and differential cell (DC) count of WBC were carried out using standard techniques. Erythrocyte indices, viz., mean corpuscular volume (MCV), mean corpuscular haemoglobin (MCH) and mean corpuscular haemoglobin concentration (MCHC) were also estimated. The results were analysed statistically to obtain the reference intervals for the haematological parameters.

As summarised in Table 1, estimated values of all the haematological parameters varied highly among the individual fish resulting in wide reference intervals. Although, the ranges of reference intervals are different, median values of the present findings are comparable with those of other *Oreochromis* species reported in other countries.

Table1: Haematological reference intervals for cultured *O. niloticus* (Nile Tilapia) (n = 48)

Haematological Parameter	Reference Interval	%	Median
RBC (x 10^6/μL)	1.72 – 2.46		2.15
Hb (g/dL)	6.23 – 13.04		9.12
PCV (%)	25.07 – 44.65		33.32
MCV (fL)	82.3 - 227		154.61
MCH (pg)	25.38 – 54.26		42.32
MCHC (g/dL)	22.85 – 31.30		27.37
WBC (/μL)	18 295 – 102 468		71 652
Lymphocytes (/μL)	4 320 – 94 631	92.77 %	66 473
Neutrophils (/μL)	353 - 7228	2.97 %	2 127
Monocytes (/μL)	238 – 2 954	1.58 %	1 130
Eosinophils (/μL)	131 - 982	0.63 %	452
Thrombocyte-like cells (/μL)	193 – 3 830	2.05 %	1470
Thrombocytes (/μL)	12 868 - 63 276		34 579

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