STUDY OF BLOOD PHYSIOLOGICAL PARAMETERS IN THREE SPECIES OF CULTIVATED FISH

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This study was carried out on three species of fish which are commercially important and presently cultivated in Sri Lanka. These are *Oreochromis mossambicus*, *Oreochoromis niloticus* and *Chanos chanos*. Blood parameters measured in the resting state for the three species were haematocrit (14.87 ± 1.35, 13.31 ± 0.75, $22.03\pm 1.66\%$), erythrocyte counts ($6.23\times10^5\pm0.48$, $6.48\times10^5=1.12$, $16.3\times10^5\pm0.404$ no/mm^3) and haemoglobin concentrations (5.49 ± 0.36, 6.91 ± 0.23, 4.05 ± 0.31 gHb/100 ml blood) respectively. From these findings the following were calculated. The Hb content per single erythrocyte, the Hb concentration per single erythrocyte and volume of a single erythrocyte. It was found that all these three values were higher in the Oreochromis species compared to Chanos. There is an inverse relationship between erythrocyte count versus volume of a singhe cell ($r=0.990$). O_2 capacities and O_2 dissociation curves were also determined. The effect pf pH on O_2 affinity was also studied. *In vivo* experiments were conducted to measure rates of O_2 consumption in the resting of fish. (4.047 ± 0.21, 4.75 ± 0.37, 4.79 ± 0.78 mlO_2/h).

The variation in the blood physiological parameters and the efficiency of blood in O_2 transport of the three species studied, is related to physiological adaptation to different modes of life, activity of the fish and ecological habitats.

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