

Reference intervals for haematological and plasma biochemical parameters in sobaity sea bream juveniles (*Sparidentex hasta*, Valenciennes 1830)

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Abstract Sobaity sea bream (*Sparidentex hasta*) is distributed in the Western Indian Ocean, Persian Gulf and Oman Sea. For monitoring health status in this species in an aquaculture condition, standard reference values for haematological and plasma biochemical parameters are indispensable. Heparinized blood samples were collected from 143 healthy sobaity sea bream juveniles raised in cylindrical polyethylene tanks with filtered running seawater. Haematologic reference intervals were as follows: red blood cell (RBC) count $1.67\text{--}2.2 \times 10^6 \mu\text{L}^{-1}$, total white blood cell (WBC) count $8.8\text{--}14.5 \times 10^3 \mu\text{L}^{-1}$, lymphocytes 85–96 %, neutrophils 2–6 %, haemoglobin 28–60 g L⁻¹, haematocrit (Hct) 24.5–33.8 %, mean cell volume (MCV) 126.3–191.7 fL, mean cell haemoglobin (MCH) 14.4–26.5 pg, mean cell haemoglobin concentration (MCHC) 92–180 g L⁻¹, erythrocyte sedimentation rate (ESR) 1.5–5 mm h⁻¹ and RBC/WBC ratio 119.2–207.5. Plasma chemistry reference intervals were as follows: total protein 3.2–3.9 g dL⁻¹, albumin 0.3–0.58 g dL⁻¹, globulin 2.7–3.4 g dL⁻¹, alkaline phosphatase 444–866 U L⁻¹, alanine aminotransferase 239–506.5 U L⁻¹, lipase 95.5–120 U L⁻¹, amylase 4–8 U L⁻¹, sodium 173–211 mmol L⁻¹, chloride 103–136.5 mmol L⁻¹, potassium 2.7–4.4 mmol L⁻¹,

calcium 2.6–3.1 mmol L⁻¹, inorganic phosphorus 2.9–5.3 mmol L⁻¹, osmolality 430–503 mOsm kg⁻¹, glucose 6.16–7.88 mmol L⁻¹, cholesterol 4.07–7.7 mmol L⁻¹, triglyceride 2.22–3.91 mmol L⁻¹, high-density lipoprotein (HDL) 1.36–2.44 mmol L⁻¹, low-density lipoprotein (LDL) 0.84–1.19 mmol L⁻¹ and very-low-density lipoprotein (VLDL) 0.27–0.78 mmol L⁻¹. Values reported here will be useful for evaluating the health status, interpretation and better understanding of various disease signs in sobaity sea bream juveniles.

Keywords Sparidae · Haematology · Plasma biochemistry · Reference intervals · *Sparidentex hasta*

Introduction

Sobaity sea bream (*Sparidentex hasta*) is a demersal carnivorous fish distributed in the Western Indian Ocean, Persian Gulf and Oman Sea. It is a protandrous hermaphrodite, maturing as males during the first or second year and turning to females with age. This species has been identified as a desirable candidate for marine aquaculture in the Persian Gulf and Oman Sea where it currently supports a small but well-established sector of aquaculture (Pavlidis and Mylonas 2011). In recent years, this species has been propagated in the Mariculture Research Station of the South Iranian Aquaculture Research Center (SIARC), Sarbandar, Iran. After 6 months of growth, juvenile fish are released into the Persian Gulf to increase the stocks or transferred to seawater cages or coastal farms.

Knowledge of the physiology of a fish species is necessary for its successful introduction to aquaculture. Moreover, evaluation of the physiological status of the fish during husbandry period is required to assess health condition and facilitate diagnostics of diseases.

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