

2

Food intake and food conversion efficiency of the snakehead  
Ophicephalus striatus Bloch in a peaty swamp in Sri Lanka

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Summary

The Muthurajawela swamp is an unutilized area of about 3000 ha and extends for about 12 km to the north of Colombo along the coastal margin of the island. The water is characterized by a low pH, low levels of dissolved oxygen and low values of primary productivity. The soil is peaty, acidic and slightly saline. Attempts to cultivate paddy have failed due to the acidic condition of the water. This study investigates the feasibility of cultivating the popular food fish, Ophicephalus striatus in this vast unutilized swampy area.

The present study was carried out for 40 days using the water of the swamp, which had a pH of  $4.8 \pm 0.2$ . A control was also carried out simultaneously using pond water with a pH of  $7.0 \pm 0.1$ . Total length of the experimental fish ranged from 15.1 to 16.2 cm. They were fed ad libitum with live forage fish, Puntius vittatus, which are abundant in the swamp.

The relationship between the mean daily food intake (Y) and the body weight (X) in swamp water was found to be  $Y = 0.0442 X^{0.7540}$  and in pond water  $Y = 0.0348 X^{0.9027}$ . The food conversion efficiencies ranged from 0.2173 to 0.2331 in swamp water and differed significantly from those in pond water (0.2123 to 0.2174). These data indicate, that food is more efficiently utilized for growth by O. striatus at low pH levels in swamp water than at neutral pH levels in control pond water.

Introduction

The snakehead, Ophiocephalus striatus Bloch which inhabits the irrigation reservoirs, streams, ponds, swamps, marshes and paddy fields in the low-country (Mendis & Fernando, 1962; Indrasena, 1965) is the most popular freshwater food fish found in Sri Lanka. Although it is the most commonly cultured species of snakehead in many South-east Asian countries (Ling, 1977), the demand for it in Sri Lanka is still entirely met by capture fisheries from the wild.

For a successful culture of the species, knowledge on food intake, digestion, absorption and conversion efficiency is a prerequisite (Wee, 1982). Many factors influencing food intake and conversion efficiency of O. striatus are reported. These include temperature (Vivekanandan & Pandian, 1977), dissolved oxygen content (Vivekanandan, 1977a), feeding frequency (Sampath & Pandian, 1984), crowding (Sampath & Pandian, 1980), activity patterns (Vivekanandan, 1977b), nutritional status (Pandian, 1967a) and size of the fish (Pandian, 1967b). However, there is paucity of information about the effect of pH on food intake and conversion efficiency of this species. Present investigations were, therefore, carried out as part of a study