

## **Suitability of medicinal plants, *Sesbania grandiflora*, *Aegle marmelos* and *Allium sativum* as feed additives on growth performance of Red tilapia**

Nishshanka K.M.\*, Amarasinghe N.J.De.S. and Guruge W.A.H.P.

*Department of Zoology, University of Ruhuna, Matara, Sri Lanka*

Three months feeding trial was carried out to investigate the effects of diets containing ingredients of three medicinal plants Kathurumurunga (*Sesbania grandiflora*- T<sub>1</sub>), Beli (*Aegle marmelos*- T<sub>2</sub>) and Garlic (*Allium sativum*- T<sub>3</sub>), on growth performance of *Oreochromis* sp. (Red tilapia) and their effect on water quality parameters. Four treatment groups namely T<sub>1</sub>, T<sub>2</sub> and T<sub>3</sub> and untreated control (C) with 40% protein level were subjected for testing. In formulating the test diets, 35% (of weight) of control diet was substituted by medicinal plant ingredient. Each test group was triplicate with twelve identical experimental indoor fiber glass tanks. Red tilapia fries (weight  $0.3052 \pm 0.0086$  g; length  $2.8 \pm 0.02$  cm; n=30) were stocked in each tank and were fed with a ration equivalent to 5% of their body mass twice per day for three months. At the end of the experiment, their final body weights & lengths were recorded to determine their condition factor. Physico-chemical parameters pH, conductivity, temperature, dissolved oxygen (DO), biological oxygen demand (BOD<sub>5</sub>), nitrate and ortho-phosphate concentrations in water were recorded every second week. During the 03 months period, fish with the diet T<sub>3</sub> and the control (C) showed significantly higher growth rates ( $p < 0.05$ ). Condition factors of fish in treatments T<sub>1</sub>, T<sub>3</sub> and C were higher and significantly different ( $p < 0.05$ ) from that of fish in the treatment T<sub>2</sub>. Even though the water quality parameters such as BOD<sub>5</sub>, conductivity, nitrate and ortho-phosphate concentrations in control tanks were higher than those in treatment tanks, they were not significantly different ( $p > 0.05$ ) except pH. This study concludes that diets with garlic can perform as same as the control diets and the inclusion of medicinal plant ingredients into the diet has no impact on the water quality in fish tanks.

**Keywords:** *Medicinal plant ingredients, Kathurumurunga, Beli, Garlic, water quality*

\*Corresponding Author: krishnimanisha@gmail.com