

Assessment of soil and water characteristics of the Tubificids worm's natural habitat in the Central province, Sri Lanka

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Tubificid worms are used in the ornamental fish industry as a live feed mainly for brooders. The present study was carried out with the objective of determining the primary soil characteristics, including total organic matter content, texture, soil pH, and depth while water characteristics such as dissolved oxygen, pH, and Ammonia content favourable for Tubificids worms' abundance. Three sites were investigated representing the most abundant place where Tubificids worms are found in the Central province, by the data collected from wild Tubificids worm collectors. At each site, three sample plots (5x5 m) were established at a 2 m distance from each, and samples were collected from six points in each plot in a random manner from October 2021 to December 2021. According to the data collected from wild Tubificids worm's soil conditions, the soil texture of the two sites was identified as sandy soils and the other site as loamy sand (Based on the U.S. Department of Agriculture (USDA) soil classification system). The highest mean organic content was observed as 3.53% within three sites considered as productive soil. There is a significant difference in the depth of soil where worms were abundant in the three sites ($P < 0.05$, One-way ANOVA) with the highest value of 4.5 ± 0.4 cm. Although there is no significant difference in both soil pH and water pH in the three sites ($P > 0.05$, One-way ANOVA), slight variations were recorded with the highest value of 7.2 ± 0.3 and 7.5 ± 0.4 respectively. The minimum dissolved oxygen concentration observed within the three sites was recorded as 3.2 ± 0.2 mg/L with the highest ammonia concentration of 4.0 ± 0.1 mg/L. Thus, there were variations in the range of soil and water characteristics including soil texture, depth of soil, Ammonia content, and dissolved oxygen where worms were abundant within three sites.

Keywords: abundant place, physico-chemical parameters, Tubificids worms

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