

## **Growth performance of *Oreochromis mossambicus* fingerlings and of spinach plants grown on two substrates in aquaponic system**

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Aquaponics is a developing agricultural technology that is rapidly gaining worldwide popularity, both for commercial production and small-scale, backyard systems. The aquaponics concept involves integrating aquaculture and hydroponics, where fish wastewater is utilized as a nutrient source for plants grown in soilless culture. Present study was carried out to assess efficiency of two types of plant beds i.e. coir peat & saw dust in terms of nutrient removal and to assess growth and survival of fish (*Oreochromis mossambicus*) and growth of spinach plant in aquaponic system. Single aquaponic system consists of a fiberglass tank with fish, spinach plants grown in three types of plants beds i.e. 50% coir dust + 50% soil, and 50% saw dust + 50% soil are considered as the two treatments, while 100% soil was considered as the untreated control. Each treatment was triplicated and the experimental design was a complete block design. Drained water from plant beds was re-circulated into the fish tanks. There is no significant difference ( $p > 0.05$ ) of plant biomass and the height increments of the plants in three different beds. However, there is a significant difference ( $p < 0.05$ ) in fish biomass changes in three different treatments but there is no significant difference in the total length increase in them. Data revealed that the coir dust which is considered as a waste from coir string industry can be used as plant bed substrate in aquaponic systems.

Key words: Aquaponics, hydroponic, nutrient, plant bed media

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