

The combination effect of *Salvinia molesta* and Cocopeat on growth and yield of Tomato (*Lycopersicon esculentum*)

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Abstract

Salvinia molesta (Salvinia) is an invasive aquatic weed with dimorphous leaves. This species has the capacity to cover the surface of even large bodies of standing and slow-moving water, forming a dense, continuous mat that preclude light penetration resulting in decreases in dissolved oxygen and pH, and increases in concentrations of CO₂ and H₂S. Dried form of Salvinia can be possibly incorporated into cocopeat media as a coarser material and a good nutrient supplement source. Therefore, this study was conducted to assess the impact of coarser material (dried form of Salvinia) in to cocopeat media to enhance the physical and chemical attributes of the medium and to evaluate the vegetative growth and yield of *Lycopersicon esculentum*. Three different combinations of dried Salvinia and cocopeat: (w/w) 90% cocopeat + 10% Salvinia (T1), 80% cocopeat + 20% Salvinia (T2), 70% cocopeat + 30% Salvinia (T3) were evaluated with available cocopeat media as the control (T4). Plant vegetative and reproductive parameters (plant height, number of leaves, number of branches, leaf area, root volume, dry weight of shoots, number of flowers, number of fruits, and yield) with bulk density, pH and Electrical Conductivity (EC) were obtained. The overall highest plant performance with significantly (p=0.005) highest yield was recorded in T3 which had suitable pH (6.4), EC (0.0161 dS/m). Significantly (p=0.005) lowest yield was recorded in the control. Vegetative growth and yield data confirmed the potential of incorporating dried Salvinia as a coarser material and a nutrient supplement in manufacturing of cocopeat grow bags. Further, this will be an effective and efficient tool of controlling the invasive *Salvinia molesta*.

Keywords: Aquatic weed, Cocopeat, Grow bag, *Lycopersicon esculentum*, *Salvinia molesta*

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