

ABSTRACT

Mushroom production has had a steady increase in Trinidad and Tobago allowing Mushroom Substrate Compost to be a viable alternative to peat and peat based material in seedling production. A comparison of MSC particle size and nutritional content to Promix are variables that are important to its use as a seedling medium and provides the basis for this research project. Four (4) growing media namely Compost (10mm), Compost (2mm), Promix (2mm), and Compost (10mm) + Promix (2mm) were used in this experiment. In the mixed treatment, the proportion of Compost to Promix was 50%. Each media was divided into fertilized and unfertilized treatments resulting in a total of 8 treatments. A completely randomized block design was used. Growth parameters of plant height, number of leaves, fresh and dry plant weight were recorded and compared. The physical and chemical properties of the growing media were also compared. The Promix (2mm) and Compost (2mm) treatment had similar time to germination and germination percentages. Additionally, the Compost (2mm) treatment performed significantly superior to the other treatments including the Promix (2mm) treatment. The Compost (10mm) treatment and Compost (10mm) + Promix (2mm), both fertilized and unfertilized treatments, showed delayed germination that continued throughout the length of the experimental period due to the presence of a crust on the surface of the growing media. Despite this impeded germination, the Compost (10mm) + Promix (2mm) both fertilized and unfertilized treatments produced significantly superior plants to the Promix (2mm) fertilized and unfertilized treatments at the end of the experiment. (The Compost (10mm) treatment (both fertilized and unfertilized treatments) performed significantly inferior to all six (6) treatments including the Compost (2mm) treatments.) The Mushroom Substrate Compost growing medium had greater water holding capacity, hydraulic conductivity and nutrient content than the Promix growing medium. The Mushroom Substrate Compost used in this experiment is a viable option to the use of Promix for seedling production. The nutrient content, as well as the physical and chemical properties of the Mushroom Substrate Compost supports its suitability as a growing medium for seedlings even in situations where little or no fertilizer is used.