

## **BUTTON MUSHROOM BEDDING WASTE VERMICOMPOST AS AN ALTERNATIVE OF PEAT MOSS TO PRODUCE PEPPER SEEDLINGS**

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### **INTRODUCTION**

High water storage capacity, low density and high cation exchange capacity (CEC) are the characteristics of peat moss used as bedding substrate in gardening, however due to the high production costs, many investigations have been carried out to find cheaper alternatives. Moreover, polluted peat moss by pathogenic fungi restricted the application of this substrate (1). It has been reported that button mushroom bedding waste is about 180 thousand tons/year remaining as a by-product of mushroom farms that may cause environmental problems (2). In this work the vermicompost of this waste has been examined to replace peat moss in growing of pepper (*Capsicum annum, Sp.*) seedlings.

### **MATERIALS AND METHODS**

The new vermicompost analyzed for some physical properties as well as the essential mineral nutrients before and after the seedling growth. The pepper seedlings were grown for 40 days in the vermicompost as the treatment and peat moss as the reference and then harvested for different analyses.

### **RESULTS AND DISCUSSION**

The mushroom waste compost showed a high porosity, ventilation, drainage and moisture storage capacity almost compatible to peat moss. The ability of this compost to provide nutrient elements was also reasonable. Analysis of variance (ANOVA) of nutrient concentration showed a significant difference ( $p < 0.01$ ) between the substrates. The mean comparison showed a significant higher content of calcium, phosphorus, nitrogen, potassium and magnesium in the mushroom waste compost over the peat moss, while the iron and zinc content was higher in peat moss. The plant analyses were also showed significant differences between the two substrates ( $p < 0.01$ ). The seedlings shoot length, stem diameter, shoot dry and fresh weight, leaf area in the mushroom waste compost were significantly higher than peat moss.

This study showed that mushroom bedding waste vermicompost, with compatible physical and chemical characteristics, may be considered as a proper alternative for peat moss to grow pepper seedlings. Although, the application of this substrate up to the final growth stage of the plant needs more investigation.

**Key words: Peat moss, Vermicompost, Mushroom waste, Capsicum**

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