

**Title** The usability of sewage sludge municipal solid waste compost and spent mushroom compost as growing media on the growth of *Euphorbia pulcherrima*

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**Citation** Book of Abstracts. International Conference on Quality Management in Supply Chains of Ornamentals. 21-24 February, 2012. Golden Tulip Sovereign Hotel, Bangkok, Thailand.

**Keywords** *Euphorbia pulcherrima*; growing media; organic wastes; quality parameters

### Abstract

The usability of composted sewage sludge, municipal solid waste compost, and spent mushroom compost in different ratios with native peat and perlite as a growing medium for *Euphorbia pulcherrima* were investigated. In the greenhouse experiment, *Euphorbia pulcherrima* were grown in pots containing mixtures of peat and perlite (4:1 v/v). Peat was replaced by organic wastes at the rates of 25 and 50 %. Some physical and chemical properties of the growing media, and horticultural parameters, nutrient elements and heavy metal composition of *Euphorbia Pulcherrima* were determined. The effects of different growing media on plant growth, horticultural parameters and mineral status of *Euphorbia pulcherrima* were found significant. Plant growth was enhanced and several important horticultural parameters, such as dry weight, plant height, leaf number, leaf area bract area and visual performance were improved in plants grown on media containing '1 sewage sludge+3 peat+1 perlite' and '1 spent mushroom compost+3 peat+1 perlite'. Both plant and media analysis showed that 25 % volume of peat was successfully replaced by composted sewage sludge and spent mushroom compost while not diminishing the quality of *Euphorbia pulcherrima*. The mixtures of 25 % composted sewage sludge + peat and perlite was found to be most suitable media based on the physical media parameters. Plant nutrient and heavy metal contents of *Euphorbia pulcherrima* were increased by using composted sewage sludge and municipal solid waste compost, but no detrimental effects were observed on plant growth.