

## **EFFECT OF RICE STRAW COMPOST AND DIFFERENT SOIL TYPES ON GROWTH AND CHEMICAL CONSTITUENTS OF *Pelargonium graveolens* (L.) PLANTS**

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### **ABSTRACT**

This experiment was conducted at the Experimental Station and in the Laboratory of Vegetable and Floriculture Department, Faculty of Agriculture, Mansoura University during the two successive seasons of 2004/2005 and 2005/2006 to study the effect of applying rice straw compost, at the rates of 0, 25, 50, and 75 % by weight, to four soil types on growth and chemical composition of *Pelargonium graveolens* (L.) plants. The used soil types in this research were calcareous, loamy, saline and sandy.

The obtained results showed that available N, P and K (ppm) in the growing media increased with increasing the compost rate (%). The best results in this regard were obtained from saline medium followed by loamy, calcareous then sandy ones.

Regarding the interaction effect of rice straw compost and soil type, the obtained results indicated that sandy and loamy media mixed with 75% rice straw compost gave, in general, the best values of all vegetative and root growth parameters in both seasons.

The obtained results indicated also that the best values of total chlorophyll content at the first cut of both seasons were of plants grown in loamy medium containing 75% rice straw compost, whereas at the second cut of both seasons, the plants grown in saline soil containing 75% rice straw compost gave the highest values in this regard.

The maximum increase of N (%) was determined in the leaves of the plants grown in loamy medium containing 50% rice straw compost, whereas the highest value of K (%) was obtained from the plants grown in loamy medium containing 75% rice straw compost. The best results of P (%) in the leaves were detected in the plants grown in calcareous medium containing 50% rice straw compost.

The highest essential oil percentages were obtained from the plants grown in calcareous medium containing 75% rice straw compost.

### **INTRODUCTION**

*Pelargonium graveolens* (L.) with common names rose geranium, rose-scent geranium and geranium, is a perennial herb that belongs to the Geraniaceae family. Geranium plants are extremely popular garden plants grown for their fragrant leaves, and are suitable for inclusion in the herbaceous border. Their leaves and green branches, as well as fresh flowers contain essential oil of several medicinal values as anti-depressant and antiseptic effects and reducing inflammation (Bown, 1995). The oil is also used in perfumes industry due to its strong rose-like odour, and in soap industry. In addition, geranium leaves are known to have antifungal activity and repel insects (Rajeswara, 2002). Geraniaceae family is chiefly native in