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Commercial Compost Increased Yields and Decreased Nitrate Amount of Several Vegetables

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Abstract

Vegetables are an important component in the diet of rural families in Iran as they provide essential vitamins and minerals. Leaf and bulb vegetables are especially important in Iran and are used in almost all Iranian meals. Although several fields are available on vegetable production, few of these concentrate on organic production methods. This study was conducted to assess the yield and nitrate content of several vegetables i.e. Chinese cabbage (*Brassica campestris* ssp. *pekinensis* Rupr), spinach (*Spinacia oleracea* L.), broccoli (*Brassica oleracea* convar. *Italica*) garlic (*Allium sativum* L.) and green beans (*Phaseolus vulgaris* L.) grown in the field during the cool and warm season 2005 and 2006 at the University of Guilan in Rasht, Iran. Four different levels of commercial compost; 0 (control), 37.5, 75.0, and 150 t.ha⁻¹ were supplied each year to the plants. There was a tendency for the total yield to be highest when fertilised with compost and lowest when the compost was not supplied. All vegetables with the highest compost treatment (150 t.ha⁻¹) gave significantly highest yield which was statistically different from other treatments with lower commercial compost. The significant differences were also found on marketable yield by Chinese cabbage, broccoli, spinach, garlic and green beans. The lowest nitrate content in the leaves and edible parts of mentioned vegetables was observed in 150 t.ha⁻¹ compost treatment followed by 37.5 and 75.0 t.ha⁻¹ compost treatments respectively. By spinach and Chinese cabbage in the petiole were shown the same results with those in the leaf. However, significant differences contents were not found among the treatments by most of the vegetables.

Keywords: Commercial compost, nitrate, vegetables, yield