

Research
Paper

Influence of Bio-organic nutrition on the performance of cabbage (*Brassica oleraceae* var. *capitata* L.) cv. PRIDE OF INDIA

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ABSTRACT

Cabbage (*Brassica oleraceae* var. *capitata* L.) belonging to the family cruciferae, is one of the most important vegetable of cole group. The cabbage leaves are eaten raw as salad and cooked as well. Literature pertaining to the production of quality cabbage heads through the use of organic nutrition is meagre. Hence, the present investigation was conducted at the Horticultural Research Farm of Ch. S. S. S. (P.G.) college Machhra, Meerut to study the influence of bio-organic nutrition on the performance of cabbage. Results revealed that significantly maximum plant height, plant spread, number of wrapper leaves, and head yield were obtained with the interaction vermicompost 10 t/ha and *Azotobacter* 5 kg/ha. While the maximum number of non-wrapper leaves and head diameter were significantly recorded highest with the combined application of vermicompost 10 t/ha and *Azotobacter* 10 kg/ha.

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Key words : Cabbage, Vermicompost, *Azotobacter*

INTRODUCTION

The indiscriminate use of chemical fertilizers during the post green revolution phase and their deteriorating effects necessitated to find out their alternatives for better yield and quality of crop products. Integration of bio-organic fertilizers (vermicompost and *Azotobacter*) in plant nutrient management opens a new way for reducing the amount of inorganic fertilizers in vegetable production. Vermicompost not only increases the growth and yield of many vegetable crops but also keeps the soil fertile and productive by improving the soil properties like water holding capacity, soil aeration and porosity. It also contains micronutrients and some latent cells of beneficial microorganisms which promote soil health (Vadiraj *et al.*, 1998). In addition *Azotobacter* inoculants fix atmospheric nitrogen accompanied by the production of growth promoting and anti-fungal substances. It also has ability to mobilize nutritionally important micro-nutrients from non-usable form to usable form through biological processes (Mishustin and Navmova, 1962). Cabbage (*Brassica oleraceae* var. *capitata* L.) is an important cole crop possessing an important position among the

vegetable crops grown in India. As the leaf head of cabbage is used as vegetable, the production of quality cabbage through organic farming is merge. Therefore, keeping the above facts in mind, the present investigation was carried out to study the response of vermicompost and *Azotobacter* on the performance of cabbage.

MATERIALS AND METHODS

The present experiment on implication of bio-organic nutrition on cabbage was conducted at the Horticultural Research Farm of Ch. S. S. S. (P.G.) College, Machhra, Meerut during 2004-2005. Soil of the experimental field was sandy loam with 0.42% organic carbon, 7.2pH and 0.052%, 0.008%, 0.019% available nitrogen phosphorous and potash, respectively. The trial was laid out by following factorial RBD with three replications. Treatments comprised of three levels of each of vermicompost (0, 5 and 10 tones/ha) and *Azotobacter* (0, 5, 10 kg/ha) supplied as basal dressing as per the treatment combinations. FYM @ 20t/ha along with half dose of recommended dose of N P K were also applied during final preparation of field to maintain the optimal soil condition. Healthy and disease