

Effect of different sources of nitrogen on growth and yield of cabbage (*Brassica oleraceae* L. var. Capitata)

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ABSTRACT

An experiment was conducted to study the effect of different sources of nitrogen on growth and yield of cabbage at Central Nursery, Department of Horticulture, Marathwada Agricultural University, Parbhani during 2008-09. The treatment T₄ (50% RDF + 50% N through sheep manure) was found to be superior over remaining treatment. Treatment T₄ was found to produce highest number of leaves (18.13), maximum plant spread (53.53 cm), maximum circumference of stem (8.30 cm), highest mean leaf area (7073.70 cm²), highest mean fresh weight of plant (620 g) and mean dry weight of plant (61.33 g), maximum weight of head (829 g) and highest yield per plot (15.46 kg) followed by T₅ (25% RDF + 75% N through sheep manure). Treatment T₂ (50% RDF + 50% N through FYM) recorded significantly earlier head initiation (31.73 days), while treatment T₃ (25% RDF + 75% N through FYM) recorded earlier maturity of head (66.26 days), followed by T₂ (68.03 days). Lowest performance was observed in treatment T₁ (control) 100% RDF.

Key words : Different sources of nitrogen, Growth, Yield and cabbage

In India, cabbage is grown on large scale. Cabbage is commonly used fresh as salad, boiled vegetable, cooked in curries and processed as well as dehydrated. It is known to possess medicinal properties.

The use of manures and fertilizers is one of the essential requirement to increase the yield. Nitrogen is key element influencing growth and productivity of vegetables. Vegetable crops needs nitrogen in large quantity as it constitute 40-50 per cent dry matter. The demand of nitrogen is high when growth is in rapid stage. It is well documented that N deficiency restricts the yield and quality of the produce. Excessive N application result in luxuriant vegetative growth, delay in maturity, poor quality of produce and accumulation of potentially hazardous concentration nitrates. Use of organic sources of nitrogen for vegetable production has become popular in recent years. Judicious use of organic manure and inorganic fertilizer is of crucial importance for getting higher yield of better quality.

Excessive use of chemical fertilizers is creating several problem of soil and human health. It is urgent need of day to replace or to optimize dose of inorganic fertilizers through organic manures in order to maintain the soil health, its productivity and quality.

The time has come to respond to the need and focus upon the benefits of organic supplements is vegetable cultivation.

With this view point, the present investigation "Effect of different sources of nitrogen on growth and yield of cabbage was undertaken"

MATERIALS AND METHODS

The present investigation entitled "Effect of different sources of nitrogen on growth and yield of cabbage" was conducted at Central Nursery, Department of Horticulture, Marathwada Agricultural University, Parbhani. A field experiment was laid out during 2008-09 in Randomized Block Design (RBD) with seven treatments viz.,

Sr. No.	Treatment No.	Treatment details
1.	T ₁	100% RDF (control)
2.	T ₂	50% RDF + 50% N through FYM
3.	T ₃	25% RDF + 75% N through FYM
4.	T ₄	50% RDF + 50% N through sheep manure
5.	T ₅	25% RDF + 75% N through sheep manure
6.	T ₆	50% RDF + 50% N through vermicompost
7.	T ₇	25% RDF + 75% N through vermicompost

Half dose of N and full of P₂O₅ and K₂O were applied during transplanting and remaining half dose of N was applied 30 days after transplanting. The observations on various character were recorded and subjected to statistical analysis.

RESULTS AND DISCUSSION

Analysis of variance was carried out for all characters as indicated in Table 1 revealed significant differences among all the treatments.