

Influence of graded levels of spacing and nitrogen on growth and yield of coriander (*Coriandrum sativum* L.)

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ABSTRACT

Influence of graded levels of spacing and nitrogen on growth and yield of coriander were conducted at the experimental field of Department of Horticulture, Marathwada Agricultural University, Parbhani (M.S.) during Rabi season of 2003-04. During the studies it has been observed that the leaf yield per hectare was increased with the decrease in plant spacing. The maximum leaf yield per hectare was found in 30 x 10 cm. Spacing. As regards nitrogen application there was increase in leaf yield per hectare with increase in level of nitrogen. The maximum leaf yield per hectare was observed under 100 kg N/ha.

Key words : Coriander and nitrogen.

Coriander (*Coriandrum sativum* L.) is used as a spice and food-flavouring agent throughout the world. In India, the leaves are appreciated for their flavoring properties and are incorporated into many dishes. India is the world's largest producer of coriander. Coriander leaves and seeds contain carbohydrates, proteins, calcium, and iron in some extent. The seeds are important ingredient of curry powder. Usually contributing the greatest quantity of all the species, next to turmeric. Coriander has also good medical value and it is used as a carminative. Coriander is grown commercially in Andhra Pradesh, Rajasthan, Tamilnadu, Karnataka, Gujrat, Madhya Pradesh, Utter Pradesh and Bihar. In order to exploit the yield potential of coriander factors like environment and cultural practices directly affects on yield. The agronomic manipulation of environment can be done to certain extent through crop husbandry in order to coincide a suitable climatic condition for different development stages of plant growth, crop nutrient, optimum plant population and suitable varieties. Among these factors, crop nutrients and spacing play the vital role in crop production. Most of the of the Marathwada soils are deficit in nitrogen, hence, it is necessary to study the response of different nitrogen doses to coriander production.

MATERIALS AND METHODS

The experiment was conducted at the experimental field of Department of Horticulture, Marathwada Agricultural University, Parbhani (M.S.) during Rabi season of the year 2003-2004 in medium black cotton type soil. The treatment consists of three different spacing viz. S₁: 30 cm x 20 cm, S₂: 30 cm x 15 cm and S₃: 30 cm x

10 cm with three nitrogen levels viz. N₁: 50 kg/ha, N₂: 75 kg/ha and N₃: 100 kg/ha. The experiment was laid out in Factorial Randomized Block Design with three replications. The spacing linings were prepared as per spacing treatments (30 cm spacing between row and 10,15 and 20cm spacing between plants) 3-4 seeds were sown at each hill, on dated 20th November 2003. Half dose of nitrogen was applied before sowing as per treatment details. The remaining half dose was applied as urea 30 days after sowing as top dressing. The observations were recorded on plant height, primary branches, secondary branches, no. of leaves/plants, spread of plant East- West and North -South fresh weight and yield of coriander plants.

RESULTS AND DISCUSSION

Effect of Nitrogen

Data presented in Table 1 and Table 2 revealed that, 100kg/ha nitrogen dose produced significant result in different growth parameter like plant height (34.71 cm), no. of leaves/plant(44.60) ,no. of primary branches/plant(6.41),no. of secondary branches / plant(13.60), East-West spread of plant (21.39) North-South spread of plant (21.08) ,fresh weight of plant (11.74 g), green yield/plant (7.02g) and yield per ha.(179.26 qt/ha).Results of present findings were supported by Patel(1988), Shinde *et al*(1985) and Sharma and Israel (1991).

Effect of spacing

The plants of coriander with spacing 30 x 10 cm showed maximum plant height (34.19 cms) and yield per ha (176.96 q/ha) where as maximum number of leaves per plant (42.60), no. of primary branches /plant (5.83), no. Secondary branches/plant (12.42), East -West spread