

Effect of different levels of Nitrogen on the performance of Tuberose (*Polianthes Tuberosa* L.) Cv. Double

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SUMMARY

A field experiment was carried out to study the effect of different levels of Nitrogen on the performance of tuberose. Results of field experiment revealed that the N₃ level of nitrogen i.e. (150 kg/ha) has significant results on the maximum height of plant, diameter of spike and bulb, maximum number of spikes per plant were recorded with N₃ treatments. The number of flowers and weight of bulbs were also maximum with N₃ dose/level as compared to N₂ and N₁ dose of nitrogen which is (125 kg/ha) and (100 kg/ha) respectively. However, opening of flowers was earlier with N₂ level and numbers of bulblets per clump were maximum in case of N₁ level of nitrogen.

Key words: Tuberose, Nitrogen, Cv.Double.

Bulbous plants constitute one of the most important groups of the floral wealth of the country. Fragrance, colour and superb excellence of these flowers for interior decoration and landscape gardening have been responsible for endearing their cultivation to garden lovers. Tuberose is an important bulbous crop and occupies prime position in floriculture industry.

Beside its cut flower use, it is also a great asset for essential oil industry. Medicinally tuberose flowers are considered to be hot, diuretic and emetic. The scope of commercial cultivation of tuberose appears to be of great importance in India. Tuberose has great export potential. Many factors viz; temperature, relative humidity, frequency of irrigation, spacing etc. are known to play predominant role in improving the quality and quantity of blooms/spikes, but out of all these factors nutritional aspect perhaps play important role. However, tuberose occupies important positioning in floriculture, but production is still not satisfactory. One of the major constraints of tuberose production is insufficient and unbalanced use of fertilizers. Fertilizer being one of the costly inputs, the grower would be definitely interested in the use of optimum dose of fertilizer for maximum return. Amongst the macronutrients, Nitrogen, Phosphorus and Potassium deserve consideration in respect of their manifold functions, which they perform in the biological architecture of the plants.

Nitrogen is one of the most important plant nutrients. It is well-established fact that N is required in higher concentration than any other elements for tuberose. Besides being the chief constituent of the Chlorophyll molecule required for photosynthesis, nitrogen is also required for synthesis of amino acids, amines, proteins, nucleic acids, nucleotides, purines, pyrimidines, coenzymes, hexose amine etc. It increases the vegetative growth of the plant, flowering, seed yield etc. Recent researches have also

shown that addition of Nitrogen fertilizers has increased ability to absorb Phosphorus, Potassium and Calcium as well as increases the cation exchange capacity of plant roots. Practically, very little information has been documented in the past on the influence of different levels of Nitrogen on tuberose.

So, in the present state of non-availability of authentic information on optimum dose of Nitrogen to explore possibility of producing quality spikes and bulbs of exportable grades; an investigation was carried out on experiment captioned "EFFECT OF DIFFERENT LEVELS OF NITROGEN ON THE PERFORMANCE OF TUBEROSE (*Polianthes tuberosa* L.)" Cv. DOUBLE at Horticulture experimental field of Ch. Chhotu Ram (P.G.) College, Muzaffarnagar.

MATERIALS AND METHODS

A field experiment was conducted at Horticulture experimental field of C.C.R (P.G.) College Muzaffarnagar during the year 2002-2003. The soil of experimental field was exclusively loam in texture, deficient in nitrogen and organic matter, having pH 7.7. The experiment was designed in R.B.D with 3-replications and 3-levels/doses of nitrogen i.e. (N₁-100 kg/ha, N₂-125 kg/ha and N₃-150kg/ha.). Before transplanting, the bulbs were treated with 0.2% Bavisten solution for 5-minutes. The regular irrigation and hoeing was done. The data was recorded for, number of leaves, height of plant, number of spikes, number of bulbs, weight of bulbs, length of spikes and various other relevant characters. Pooled data of research is given in table-I.

RESULTS AND DISCUSSIONS

Data presented in table-I, clearly revealed that number of days taken for sprouting of bulbs (9.04) was less in case of N₃ dose of nitrogen (150 kg/ha). Also number of sprout

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