

EFFECT OF NITROGENOUS FERTILIZER ON GROWTH AND YIELD OF ONION (*ALLIUM CEPA* L).

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ABSTRACT

An experiment was laid out to assess the effect of nitrogen levels on the onion (*Allium cepa*) varieties in relation to growth and bulb production at Horticulture orchard of Sindh Agriculture University, Tandojam during 1995-97. The results revealed that all the growth and yield traits were significantly affected by varieties except plant height. Similarly all the traits were significantly affected by fertilizer levels except height and number of leaves per plant. Interactions showed significant response for height, single bulb weight and bulb yield per plot and per hectare. However, all the traits were higher in phulkara and most of the growth and yield traits were maximum with 160 kg N/ha. except number of leaves per plant.

INTRODUCTION

Onion (*Allium cepa* L) is one of the most important commercial vegetable crop and is widely grown in all countries of the world. It has a great diversity of uses ranging from simple salad to numerous other products and mixed dishes. Among the necessary cultural and nutritional requirements, optimum dose of nitrogenous fertilizers play an important role in bulbs yield. Limited research work so far has been conducted on the nutritional requirements of onion under varying agroecological conditions of Pakistan in common and particularly in Sindh. Pandey and Mundra (1971) observed that application of nitrogen increased plant height, number of leaves, bulb length and diameter and yield of onion. Verma *et al* (1972) reported that crop yield and bulb size were increased in response to nitrogen at 200 kg/ha. and higher rates of nitrogen were not economical. Das *et al* (1972) found that application of nitrogen at 120 and 160 kg/ha. produced maximum onion yield. Sypion *et al* (1974) obtained the best bulb yield with higher dose of 150 kg nitrogen/ha. Mangual *et al* (1979) observed that application of higher rates of 222 kg nitrogen/ha. resulted in maximum yield of onion. Shaikh *et al* (1987) observed that increasing dose of nitrogen significantly increased the bulb yield and bulb volume respectively and plant height and number of leaves were higher in optimum dose of nitrogen.

The present studies were conducted to determine the effect of different doses of nitrogen on the different onion varieties in relation to bulb production under Tandojam Sindh conditions.

MATERIALS AND METHODS

Experiment was conducted at the Horticultural Orchard of Sindh Agriculture University, Tandojam during 1995-97 on clay loam soil having pH 7.4-8.0, organic matter 0.32-0.54%, total nitrogen 0.03-0.04%, P 11-12 ppm, and available k 290.00-225.00 ppm. These were determined by procedure adopted by Kent Jones and Amos (1967) and Jackson (1958). The experiment was conducted in randomised complete block design having a net plot size of 3x3 meters replicated four times. The details of treatments are as under:

Varieties

V₁ = Red Nasik

V₂ = Phulkara