

## Effect of integrated nutrient management on growth and yield of onion seed production

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### ABSTRACT

A field experiment entitled "Integrated nutrient management in onion (*Allium cepa* L.) seed production" with variety Phule Samarth was conducted at Scheme for Research on Onion Storage, Department of Horticulture, Mahatma Phule Krishi Vidyapeeth, Rahuri, during the *Rabi* season 2005-06. The soil of the experimental field was clay loam in texture, alkaline in reaction (pH 8.30) with low in available phosphorus (9.995 kg/ha) and nitrogen (206.97 kg/ha) and high in available potassium (235.2 kg/ha). Among growth attributes plant height, number of leaves were significantly influenced by different organic, inorganic fertilizer, biofertilizers and their combinations. Significantly higher values of these parameters were recorded with the fertilizer combination of 150% RDF + FYM + BF over all treatments. Days to sprouting of onion bulbs, per cent stalk bending, height of flower stalk were not influenced significantly by application of various treatments of organic, inorganic fertilizer, biofertilizers and their combinations.

**Key words :** Organic, Inorganic, Biofertilizer

Onion (*Allium cepa* L.) a native of palestine is one of the most important vegetable cash crop grown for vegetable in green stage and also for mature bulb. It is indispensable item in every kitchen as it adds flavour to various vegetable preparation, hence it is called "Queen of Kitchen" (Selvaraj, 1976). Onion is being extensively cultivated all over the world especially in India, Pakistan, China, Netherland, Bangladsh. and Australia. India is the second largest producer of onion in the world with in area of 5.93 lakh ha and production of 75.15 lakh MT next to China (Anon., 2005). Maharashtra is the largest producer of onion in the country with an output of 14.22 lakh MT production from 1.21 lakh ha area which is about 25 per cent of the total production and 20 per cent of the total area. About 70 per cent of total onion exported from India is from Maharashtra state. In Maharashtra the onion growing area is concentrated mainly in Nasik, Pune, Jalgaon, Dhule, Ahamadnagar, Solapur and Satara districts. Nasik district is major producer of onion and contribute 34 per cent of the state area (Singh, 2003).

Under ambient condition, however, immature or unfilled seed has poor germination and viability. Environmental condition as well as management practices during crop growth stages are found to influence the seed quality. The yield of such a valued crop is low on account of non-availability of genetically pure, genuine seed. With the use of poor seed the investment to major inputs like fertilizer, irrigation, plant protection, etc. will not pay rich dividends. Considering the importance of seed and non-

availability of genetically pure, true to type seed is highly essential to have standardized technology for onion seed production. In Indian condition, onion seed production is undertaken only during *Rabi* season, while higher temperature of more than 35°C especially during flowering have detrimental effects and cause significant reduction in seed yield and also lowered seed viability (Wagh, 1986).

Nutrition is one of the most important factor which governs the onion seed production. The nutrients needed by the onion seed crop are supplied through organic manures and inorganic fertilizers. In past, the use of organic manures has been reported to improve physical, chemical and biological properties of soil. However, due to low nutrients, these organic manures alone may not be able to meet the nutritional requirement of high yielding cultivars and hence, there is need for supplementing the use of chemical fertilizers.

### MATERIALS AND METHODS

The present field investigation was carried out during *Rabi* season 2005-2006 at Scheme for Research on Onion Storage, Department of Horticulture, Mahatma Phule Krishi Vidyapeeth, Rahuri (Maharashtra). The altitude varies from 495-569 meters above mean sea level. The tract is lying on the eastern side of Western Ghat and falls under rain shadow area. The experiment was conducted in soil with moderate fertility and good drainage. The experimental soil was moderately alkaline (pH 8.5), with low soluble salts (non-saline) and clay loam