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Nutrition of brinjal

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Brinjal is one of the important fruit vegetables of India, occupying 8.14% of total area and producing 9% of total vegetable production in India. Lot of research has been carried out in brinjal nutrition and was found that nitrogen and phosphorus played a greater role in producing more economic yield through positive influence on various growth and yield contributing attributes. The concerted efforts made in difficult parts of India gives a clear picture that potassium play lesser role in brinjal nutrition. The recommended doses of FYM, N, P and K vary in different growing region of India. Approximately 3:0.3:3kg of NPK is required to produce one tonne of brinjal fruits. It has also been vividly established that the nutritional requirements varies to the soil type in which it is grown. Similarly the nutritional requirement is comparatively higher for F_1 hybrids than the conventional varieties. There is also a great difference in N, P and K requirement between open field and green house conditions. The significance of foliar application of nutrients both through conventional and water soluble fertilizer has also been broughtout. In nutshell, the role of nitrogen is enhanced growth and phosphorus on flowering as well as yield and quality of brinjal has been discussed. This paper discusses the various research works and results obtained in different parts of country in relation to N, P, K nutrition on growth, yield and quality of brinjal.

Major constraint in brinjal production is lack of knowledge of their full package of practices mainly about the nutrient requirements. Brinjal cultivars are generally more responsive to fertilizer applications and thus producing more biomass through higher photosynthetic activity. Further, efficient and economic use of the nutrients would help in decreasing the input costs for raising a bumper crop. Studies in different parts of India have also shown great importance of fertilizer in increasing growth and yield of brinjal. Brinjal need 3-3.5kg nitrogen, 0.2-0.3kg P_2O_5 and 2.5-3.5kg potassium for producing one tonne of fresh fruits (Hegde, 1997). Standardization and application of suitable ratio of nutrients will increase the economic yield, quality and shelf life of the fruits. The nutrient requirements for brinjal vary from region to region depending upon the soil and climatic conditions (Tandon, 1987).

The available information on N, P and K nutrition of brinjal is reviewed here under which includes results on F_1 hybrids as well as open pollinated varieties.

Effect of nitrogen on growth and yield of brinjal :

Nitrogen is a key nutrient in the physiology of the plant, improves the photosynthetic efficiency of the plant and ultimately the yield. Nitrogen application gradually increased flower production in brinjal, however, with excessive nitrogen supply there was decline in flower as well as fruit production and fruit size was also reduced (Assami and Kadata, 1933). Plants treated with higher dose of nitrogen exhibited better growth in terms of plant height, dry matter production and leaf area index compared to lower dose. The plant height, number of branches, leaf area was highest at 90 kg N/ha in brinjal grown under Nagpur conditions. But early flowering was recorded by application of 67.5 kg N/ha (Patnaik and Farooqui, 1964a). Increasing N levels up to 40 kg N/ha increased shoot dry matter and increasing N levels increased total