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Influence of integrated nutrient management (INM) on yield and quality of Lemon (*Citrus limon* Burn.) cv. PANT LEMON-1 under Western U.P. conditions

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Abstract : The experiment was conducted at Horticulture Research Center of Sardar Vallabh Bhai Patel University of Agriculture and Technology, Meerut (U.P.) during 2009-10 in autumn and spring season. The experiment was laid out in randomized block design (RBD) with 3 replications. The data were found significantly effective with the application of integrated nutrient management. The maximum number of fruit/tree, fruit weight (g), fruit diameter (cm), fruit yield (kg/tree), juice content (%), acidity (%) and ascorbic acid (%) was found under the treatment (T₇) 50% NPK (210g N+140g P+210g K) +15 kg VC +5 kg NC followed by other treatment and minimum was found under the control.

Key words : Pant lemon-1, NPK, FYM, Vermi compost, Neem cake

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A large variety of fruits are grown in India. Fruits are rich source of various nutrients *i.e.* carbohydrates, vitamins, proteins, fats and minerals etc. Fruits have great value to fetch the maximum return by value added products. Among several cultivars of lemon grown in India, Pant lemon-1 is the most promising cultivar in western U.P. condition. It is a single plant selection from “Kagzi Kalan lemon” (Baldevraj, 1990). In developing countries like India, deficiency of vitamins C is quite common. This vitamin is useful in healing of wounds, developing stronger blood vessels and gums, giving strength to bones and protecting from cold and cough etc. Similarly, lemon is a good source of vitamin C compensates the deficiency symptoms of this vitamin through the plenty availability. The lemon oil is a stimulant and carminative when given internally as medicine. A recent emphasis has been given to the integrated nutrient management, combined use of organic and inorganic fertilizers at an optimum level, to supply the various plant nutrients. The evidence that the organic manure reduces the amount of chemical fertilizers for supplying both macro and micro-nutrients and to

minimize the deficiency symptoms of nutrients in various fruit plants for sustainable fruit production, INM plays a vital role to enhance the quality production of fruits at low inputs by using INM. Results of long term fertilizer experimentation in Indian conditions clearly indicated that use of inorganic fertilizers along with organic manures sustained physico-chemical properties of soil (Numbiar and Ghose, 1984). The main object of INM is to minimize the inorganic fertilizers by using substitute organic sources, *i.e.* FYM, vermicompost, neem cake etc.

RESEARCH METHODS

The present investigation was carried out at Horticulture Research Center of Sardar Vallabh Bhai Patel University of Agriculture and Technology, Meerut, during the year 2009-2010 in autumn and spring season. The experiment was laid out in randomized block design (RBD) with three replications. Vermi compost and neem cake were applied before one week prior to fertilizers application and FYM was mixed in soil 15 days before fertilizers applications to the tree. The fertilizers were