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Research Paper

# Effect of integrated nutrient management on quality parameters of summer groundnut

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## ABSTRACT

Groundnut (*Arachis hypogaea* L.) is an important oilseed and cash crop of the country. Independent use of neither the chemical fertilizers nor the organic sources can sustain the fertility of soil and productivity of crops. The present investigation was carried out to find out the effect of integrated nutrient management on quality parameters of summer groundnut. The results revealed that the highest kernal yield, oil yield, protein yield, oil content (%) and protein content (%) were recorded in the treatment of 100 per cent GRD while lowest quality attributes were obtained in treatment of 25% nitrogen through organic fertilizer plus 75% nitrogen through processed urban compost.

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**KEY WORDS :** Quality, Integrated nutrient management, Summer groundnut

In Maharashtra, the groundnut occupies a dominant position as an oilseed crop. The major groundnut growing districts are Dhule, Jalgaon, Akola, Nasik, Kolhapur, Satara, Pune, Ahmednagar and Parbhani. During 2003-04 groundnut occupied an area of 3241 lakh hectares with annual production of 3552 lakh metric tonnes with its productivity of 1096 kg $ha^{-1}$ in *Kharif* season (Anonymous, 2005). During summer season, it occupied an area of 547 lakh hectares with production of 816 lakh metric tonnes and the average productivity of 1492 kg $ha^{-1}$ (Anonymous, 2005). It appears from the above figures that, yields are higher during summer season and this may be due to adequate sunlight, temperature, availability of timely irrigation and fairly disease and pest free condition. Fertilizers are the 'kingpin' in the present system of agriculture. Scientific uses of fertilizer assume vital importance in sustainable agriculture. Fertilizers pay back to the farmer more profit per unit investment. Integrated nutrient management plays an important role in boosting groundnut production. In other words this concept refers to the maintenance of soil fertility and supply of plant nutrients on desired levels for obtaining optimum or higher groundnut production through all possible sources as organic, inorganic, biotic etc. in an integrated manner. The incorporation of bulky organic manures such as farmyard manure, vermicompost etc. play an important role in plant nutrition especially for nitrogen. The decomposition of organic matter results into formation of humus which can bring out physical, chemical changes in soil and play an important role in maintaining soil fertility in both light and heavy textured soils. The processed urban compost is the organic manure which also gives beneficial effect on soil health and production of crop.

## RESEARCH PROCEDURE

The field experiment was conducted during summer season 2005 at Post Graduate Institute Research Farm, Mahatma Phule Krishi Vidyapeeth, Rahuri. The ten treatments consisted of 100 per cent recommended dose of NPK (25:50:00 kg $ha^{-1}$ plus 5 t FYM $ha^{-1}$) and nine treatment combinations with 25, 50 and 75 per cent N through inorganic fertilizer plus 75, 50 and 25 per cent N through organic manures namely FYM, processed urban compost and vermicompost were laid out in randomized block design with three replications. The soil of the experimental plot was sandy clay loam in texture with low in available nitrogen (235 kg $ha^{-1}$), moderately high in available phosphorus (32 kg $ha^{-1}$) and very high in potassium (393 kg $ha^{-1}$) with alkaline in reaction (pH 8.1).

## RESEARCH ANALYSIS AND REASONING

The data recorded during the course of investigation were tabulated, statistically analysed and results are