

Influence of phosphatic fertilizers, gypsum and sulphur on yield contributing characters and yield of groundnut (*Arachis hypogaea* L.)

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ABSTRACT

Field experiments were conducted at Agronomy farm, College of Agriculture, Pune during *Kharif* 2006 and 2007 to investigate the influence of phosphatic fertilizers, gypsum and sulphur on yield contributing characters and yield of groundnut. Trials were conducted in a Randomized Block with four replications and six treatments viz, Absolute Control (T_1), Single super phosphate + 5 t FYM/ha (T_2), Diammonium phosphate + 5 t FYM/ha (T_3), Rock phosphate + 5 t FYM/ha (T_4), RDF + Gypsum @ 500 kg/ha (250 kg gypsum/ha at the time of sowing and 250 kg gypsum/ha at the time of peg formation) + 5 t FYM/ha (T_5) and RDF + elemental sulphur @ 30kg/ha + 5 t FYM/ha (T_6). The results revealed that the yield contributing characters like number of developed pods/plant, pod weight/plant, hundred pod weight, hundred kernel weight, shelling per cent and dry pod and haulm yields were favourably influenced due to RDF + gypsum @ 500 kg/ha (250 kg gypsum/ha at the time of sowing and 250 kg gypsum/ha at the time of peg formation) + 5 t FYM/ha.

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Key words : Phosphatic fertilizers, Gypsum, Sulphur

INTRODUCTION

Groundnut is grown on a large scale in almost all the tropical and subtropical countries of the world. The most important groundnut growing countries are India, China, Nigeria, Sudan and U.S.A. It is grown over an area of 6.9 million hectares with total production of 5.3 million tonnes in whole world. India occupies the first place with regard to area and second in production. In India, during 2002-03 area and production of groundnut was 21.12 million ha and 11.31 million tonnes, respectively.

Its cultivation is mostly confined to the southern Indian states viz., Gujarat, Andhra Pradesh, Karnataka, Tamil Nadu and Maharashtra. The other important states where it is grown are Madhya Pradesh, Rajasthan, Uttar Pradesh and Punjab.

In Maharashtra, groundnut is grown on an area of 519.5 thousand ha and the production of 545.2 thousand tonnes. Major groundnut growing districts in Maharashtra are Dhule, Nasik, Jalgaon, Ahmednagar, Parbhani, Pune, Satara and Kolhapur.

Groundnut kernels are rich in vitamins A, B₁, B₂ and E. Oil content in kernels is 43 to 49 per cent and protein content is 28 to 29.31 per cent. Groundnut cake is rich in protein content (46%) and is the best source of organic manure. The creepers are used as cattle feed and shells as fuel. Groundnut is not only used as edible oil but also

used in manufacture of soap, hydrogenated vegetable oil, toilet requisites and used for culinary purpose as well. Therefore, groundnut crop plays an important role and has got immense importance in the national economy of our country. With increase in population in geometric progression, the demand for vegetable oil in India has been steadily increasing more than 4% per annum where the rate of increase in production is only 2% per annum. Every year the gap between demand and supply of edible oil is increasing.

Very meager information is available on calcium and sulphur requirement in groundnut hence, emphasis is given to nutrient management in groundnut.

MATERIALS AND METHODS

The experiments were conducted during *Kharif* 2006 and 2007 at Agronomy farm, College of Agriculture Pune 411 005 (M.S.) The soils of experimental area are grouped under inceptisol order. The soil of the experimental area is medium black with 60-90cm depth, dominant type of clay mineral having high swell- shrink properties.

The experiments were conducted in Randomized Block Design with four replications. Phule Pragati (JL-24) variety was used. There were six treatments consisting phosphatic fertilizers, gypsum and sulphur. The treatments consisting of Absolute control (T_1), Single

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