



## Productivity and profitability of summer groundnut (*Arachis hypogaea* L.) on heavy black kyari land of South Gujarat

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### ABSTRACT

A field experiment was conducted at RRRS, NAU, Vyara Dist. Tapi, Gujarat during summer 2008 to 2010 to find out an effective organic source of manures as conditioners for soil improvement along with chemical fertilizer in summer groundnut. The organic conditioners used are FYM@ 10t/ha, vermicompost@2.5 t/ha and bio-compost@5t/ha along with 0, 50 and 100 per cent recommended dose of fertilizer (25-50-00 NPK kg/ha). Among organic conditioners all the sources were equally effective and have statistically similar effect on the growth and yield of groundnut as well as improvement in soil health in respect of organic carbon and nutrient content. However, economically bio compost@5t/ha was found most effective and gave higher return per rupee investment (Rs. 4.24). Nutrient supply through 100 per cent RDF recorded significantly highest groundnut pod and haulm yield and also recorded higher net return (61392 Rs/ha). There was no interaction effect observed between organic and inorganic sources under study. This study concluded that bio-compost, FYM and vermi compost are equally effective for groundnut crop but FYM was found most economical source.

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**Key words :** Productivity, Profitability, Summer groundnut, Bio compost, Vermicompost, FYM

### INTRODUCTION

Groundnut (*Arachis hypogaea* L.) is one of the premier and leading oil seed crops of India. It occupies about 24.7 million ha area in India and reported 33 million tones total yield. In south-eastern portion of Gujarat state, a vast scope to expand the groundnut area in rice fallow ecosystem during the rainy-season. Summer groundnut provides assured production than the rainy-season crop. However, the yield potential of this crop grown during summer can be realized to a greater extent by adopting suitable water and nutrient management practices. The decline in soil fertility and productivity are the matter of nutrient imbalance, which is recognized as one of the most important factors that limits the crop yield (Nambiar and Ghosh, 1984). Soil structure and available moisture have greater effect on groundnut production and it is assumed to be positively altered by organic manures. Application

of organics favourably improved the physical properties of soil, this might be due to higher addition of humus through organics. The conjunctive application of organics with inorganics sources of nutrients also provides micro nutrients as well as modifies the soil physical behaviour and increases the efficiency of applied nutrients (Pandey *et al.* 2007). Therefore, integrated nutrient management is an important aspect in groundnut, as it does not only fetch promising yield but also maintain soil fertility. The information available on nutrient management of groundnut when grown during summer is scanty, particularly for rice fallow under region of South Gujarat hence, this investigation was carried out.

### MATERIALS AND METHODS

A field experiment was conducted during summer 2008 to 2010 at Regional Rice Research Station, Navsari

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