

## Effect of layouts and spacing on yield and quality of bold seeded summer groundnut (*Arachis hypogaea* L.)

H.M. PATIL\*, P.T. KOLEKAR AND B.T. SHETE

Department of Agronomy, Mahatma Phule Krishi Vidyapeeth, RAHURI (M.S.) INDIA

### ABSTRACT

The present investigation entitled, "Effect of layouts and spacing on yield and quality of bold seeded summer groundnut" was carried out at the Central Farm, Mahatma Phule Krishi Vidyapeeth, Rahuri during summer 2005. The experiment was laid out in split plot design with twelve treatment combinations and the number of replications was four. The three main plot treatment consists of three planting layouts viz., ridges and furrows, broad bed furrow and flat bed layouts and the four sub plots treatment consist of four spacing viz., 30 x 10 cm, 30 x 15 cm, 45 x 10 cm and 45 x 15 cm. The plant growth in terms of plant height, spread, number of branches and total dry matter produced were maximum in BBF and followed by RF and same were minimum in flat bed method. Similarly characters such as protein content, hundred seed weight, kernel, oil and protein yield were all significantly more to BBF layout. The yield contributing characters such as weight of pods, weight of kernels, number of kernels per plant, total number of pods per plant, shelling percentage, dry pod yield and haulm yield were also significantly better in case of BBF followed by RF with 30 x 10 cm spacing. Based on above findings it could be concluded that growing groundnut on broad bed furrow (BBF) at 30 x 10 cm spacing was found beneficial proposition for achieving higher productivity.

**Key words :** Layouts, Spacing, Quality, Bold seeded, Groundnut.

### INTRODUCTION

Groundnut (*Arachis hypogaea* Linn.) is the foremost important oil seed crop of India. It is used not only as edible oil, but also in manufacture of soaps, hydrogenated vegetable oil, toilet requisites and for culinary purpose at well. The kernels are rich in protein and vitamins viz., A, B<sub>1</sub>, B<sub>2</sub> and E and the cake is rich in protein content (46 %) which is best source of animal and poultry feed and also good source of manure haulms rich in protein (10-12 %) are palatable and used as nutritional feed for cattle. During 2003-04 the area under this crop in India was 60.02 lakh ha with production of 8.33 million metric tonnes with productivity of 774 kg ha<sup>-1</sup> (Anonymous, 2005). Maharashtra occupied an area of 3241 lakh ha with annual production of 3552 lakh metric tonnes with productivity of 1096 kg ha<sup>-1</sup> in *khairf* season of 2003-04. During summer season, it occupied an area of 547 lakh ha with production of 816 lakh metric tonnes with the productivity of 1492 kg ha<sup>-1</sup> (Anonymous, 2005). There are excellent prospects for growing groundnut, in summer season under irrigated conditions. There is a need to evolve suitable agronomic practices for efficient and economic use of irrigation water and fertilizers so as to increase area and production of groundnut.

Groundnut pods grow underground, therefore the loose and well aerated seed bed is important as loose soil surface is useful for penetration of pegs and development

of pods. Thus, the crop has potentially to increase the yield during summer season. However, the main hurdle in extension of groundnut for summer cultivation is lack of information on field layouts and water management technology. Broad bed furrow technique provides loose soil mass for development of pods besides, the furrows are useful both for irrigation and drainage of excess water as groundnut is more sensitive to water fluctuations and more or less at critical groundnut stages adversely affect the yield. Studies at ICRISAT showed that increasing yield of groundnut can be obtained by growing it on broad bed furrow (Anonymous, 1987), Nalawade and More (1993) reported significant response of broad bed furrow technique resulting in higher pod yield.

Recently evolved groundnut variety TPG-41 is found highly productive during *khairf* as well as in summer season. However, the plant structure of this variety is compact and under normal spacing of 30 x 10 cm same space between rows remain unoccupied by the plant hence there is scope to increase the plant density either by changing intra row spacing. Therefore, it is necessary to determine suitable planting layout and plant spacing of crop during summer season.

In view of the above considerations, the present investigation was planned with objective of to know the suitable layouts and spacing for bold seeded summer groundnut.

\* Author for correspondence.