



# Benefits of ground nut improved production technologies to small and marginal farmers of Datia district in Madhya Pradesh

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**Abstract :** Considering that non- adoption of improved ground nut technologies by the small and marginal resource poor farmers is due to non availability of quality seeds, poor knowledge, inappropriateness of technologies etc. In the current study, improved groundnut technologies have been implemented through participatory mode so as to generate awareness about improved technologies among them. The participatory approach could make the farmer to learn, adopt and spread new technologies. The economic indicators have shown that net return of Rs. 28087 per ha was realized by adopting improved variety and integrated crop management (ICM) package during *Kharif* season, and it is higher than the returns realized by growing local variety (Indori/ Junku) with local practice (Rs. 18825/ha). The cost of production has been found to be Rs. 8.83/kg and Rs. 11.10/kg with the improved practice and farmers practice, respectively.

**Key Words :** Adoption improved production technologies, Quality seeds, Knowledge, High seed cost

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## INTRODUCTION

In India ground nut is an important oilseed, food and feed crop grown in an area of 6.45 million ha with a total production of 6.57 million tons based on an average of the last five years (FAO, 2005). This contributes to 26.6 per cent of world's ground nut area and 18.5 per cent of world's ground nut production. Ground nut occupies nearly 28.3 per cent of the cultivated area and contributes 31.7 per cent of the production of total oilseed in the country. It is widely used as cooking oil, digestible protein, minerals and vitamins in many countries and contributes significantly to food security and alleviating poverty. About 80 per cent of India's ground nut production is crushed for oil, 12 per cent using as seed, 5 per cent for food and 2 per cent for export.

Among many reasons ascribed for the lower productivity of ground nut, adoption of agro-technologies is a key factor, which significantly affects the vegetative and reproductive growth, and finally the yield. The advances in agricultural technology have contributed to increased production and

productivity of many crops at research and farmer levels. However, it appears from several socio-economic studies that the same has not been reflected in the rises in income level and improvements in socio-economic status of small and marginal farmers (Mann *et al.*, 2001).

The non adoption of improved technologies by small and marginal resource poor farmers is mainly due to non availability of quality seed, high seed cost poor knowledge and inappropriateness of the technologies to these farmers.

The appropriateness of technologies to farmers may be improved by employing innovative participatory approaches, which involves encouragement of farmers to engage experiments in their own fields, so that they learn, and adopt new technologies and spread them to other farmers also. Because of low (6.15%) seed replacement rate (Tiwari, 2002) in ground nut, on farm trials and front line demonstration were followed by Krishi Vigyan Kendra, Datia, the study area, to increase availability of farmers preferred quality seed and there by to generate more income to the farmers.

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## MATERIALS AND METHODS

The Rajapur and Sanora villages of Datia Block of Datia district were purposively selected based on the area under groundnut, before initiation of study, the scientists of Krishi Vigyan Kendra had discussions with the farmers of these villages. The problems identified by farmers in consultation with scientists were prioritized and appropriate interventions were identified for addressing the problems in ground nut cultivation. The farm trials were conducted in 6 farmers of Rajapur and 5 farmers of Sanora villages during *Kharif* 2009 and 2010, respectively. The farmers inclusion in the programme was exclusively based on their interest in participatory evolution of improved technology. Analysis and economic indicators like net return, cost of cultivation and benefit cost ratio (BCR) were used to elicit the economic impact of ground nut technology intervention.

The following interventions were compared in current study :

- T<sub>1</sub> : IP - Improved variety TAG-24 was supplied to the farmers with ICM package (The ICM package included seed treatment with carbendazim @ 2.5 g/kg 20:40:40 kg N:P:K per ha, followed by hoeing and need based plant protection measures).
- T<sub>2</sub> : FP - Local available variety (Indori/Junku) with 20:20:0 kg N:P:K per ha.

## RESULTS AND DISCUSSION

Six on farm trials in 2008 and five trials in 2009 were conducted during rainy season with the objective to demonstrate the beneficial effect of improved practice (IP) over farmers practice (FP). IP was compared with FP in an area of 1000 sqm. in each farmer's field. The amount of rainfall from June to December was 686 mm during 2008 and 764.5 mm during 2009.

The improved production technologies gave higher yield and recorded mean yield of 1358.50 kg/ha which was 34.10 per cent higher than that obtained by the farmers practice (Table 1). Performance of IP depends not solely on the yield but also on other attributes. Ram Krishna *et al.* (2005) reported the yield increase and economic benefits through improved practice over farmers practice in chickpea.

The economic indicators showed that a net return of Rs. 28087 /-per ha was realized by adopting improved variety and ICM package, which was higher than the returns realized by growing local variety with the farmers practice (Rs. 18825 /-per ha). The cost of production was Rs. 8.83 per kg under IP and Rs.11.10 per kg in farmers practice. The B:C ratio of 2.83 was achieved through adoption of improved practice. The yield increase and better economic returns through adoption of improved groundnut technologies were also reported by Govind raj *et al.* (2009).

The results of current study clearly brought out the

**Table 1 : Benefits of IP over FP based on mean data of year 2009 and 2010**

Intervention	Mean yield (kg/ha)	Cost of cultivation (Rs/ha)	Gross return (Rs/ha)	Net return (Rs/ha)	B:C ratio
Improved practice (T <sub>1</sub> )	1358=50	12000 /-	40087 /-	28087 /-	2.83
Farmers practice (T <sub>2</sub> )	1013=00	11250 /-	30075 /-	18825 /-	2.17
Increase in (%)	34.10	6.66	33.29	49.20	

potential and benefits of improved production technologies of ground nut for small and marginal farmers in the form of yield increase and economic returns, in rain fed groundnut farming system of Madhya Pradesh.

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