

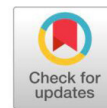
Impact of Minikit Demonstrations on Productivity and Profitability of Groundnut in Anantapuramu district of Andhra Pradesh

K. Rama Subbaiah,¹ D. Sampath Kumar² and T. Mahesh Babu^{3*}

¹Acharya N G Ranga Agricultural University, DAATTAC, Anantapuramu, Andhra Pradesh, India

²Acharya N G Ranga Agricultural University, Agricultural Research Station, Kadiri, Andhra Pradesh, India

³Acharya N G Ranga Agricultural University, KVK, Utukur, Kadapa, Andhra Pradesh, India



Abstract

The Minikit demonstrations in groundnut crop with test entry K-1812 were conducted by DAATT Centre, Anantapuramu in farmers fields at 15 different locations during the kharif season under rainfed conditions from 2015 to 2018 to evaluate its performance and acceptability by the farmers. Kadiri-6 variety was the check variety that is most popular among the groundnut farming community. The results revealed that the highest pod yield was obtained in the demonstration plot (K-1812) with an average of 1187 kg/ha as compared to 980kg/ha in the control plot (Kadiri-6). Higher net returns (Rs 33107/ha) was obtained in demonstration plots compared to farmers practice plot (Rs 23192/ha). The increase in the demonstration yield over farmers practice was 17.16 per cent. The B:C Ratio recorded in the demonstration plot was 2.4, whereas in case of farmers practice it was only 1.9.

Keywords: Impact, Productivity, Profitability, Groundnut and Andhra Pradesh

Introduction

Groundnut is an important oilseed crop grown in India. Groundnut is called the 'King' of oilseeds. It is one of the most important food and cash crops of our country. While being a valuable source of all nutrients, it is a low-priced commodity. Groundnut is also called wonder nut and poor men's cashew nut. Groundnut is one of the most important cash crops in our country. It is a low-priced commodity but a valuable source of all nutrients. Globally India ranks first in area and second in production. India, accounts for 31 % of the total groundnut area in the world (24.6 m. ha) and 22 % of the total production (35.7 mt.). The area under the groundnut crop in Andhra Pradesh was 7.47 lakh hectares from both the kharif and rabi seasons. Among the major groundnut-producing states of India Gujarat stands first place in area and production of groundnut followed by

*Corresponding Author: T Mahesh Babu.

E-mail Address: - mahesh9491@gmail.com

DOI: <https://doi.org/10.58321/AATCCReview.2023.11.02.59>

© 2023 by the authors. The license of AATCC Review. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<http://creativecommons.org/licenses/by/4.0/>).

Andhra Pradesh. Seventy percent of the area and seventy-five percent of the production has been concentrated in the four states of Gujarat, Andhra Pradesh, Tamil Nadu and Karnataka. Groundnut is raised mostly as a rain fed Kharif crop, being sown from May to June, depending on the monsoon rains. In some areas, or where the monsoon is delayed, it is sown as late August or early September. In Andhra Pradesh it is mainly cultivated in Rayalaseema districts viz., Anantapur, Kadapa, Kurnool, Chittoor districts and some mandals of Nellore district.

In Andhra Pradesh, Groundnut production and area are highest in Anantapur district with production of 3.44 lakh tonnes and 4.09 lakh ha respectively followed by Chittoor and Kurnool districts. The productivity of Groundnut is highest in the Nellore district with 4072 kg/ha. Groundnut productivity in India is low due to moisture stress, poor soil fertility, pests and diseases, low inputs, and cultivation of the crop on marginal and sub-marginal lands. Nearly 80% of the area sown to groundnuts in India is rainfed and relies entirely on summer monsoon rainfall. Improvement of resistant varieties is the key solution against drought, pest and diseases. New groundnut varieties developed by the Agricultural Research Station, Kadiri which is the main center

for groundnut research in Andhra Pradesh State were tested in the farmers' fields through mini kit trails, which is the main intervention of Extension Scientists of the University. Aiming this objective DAATT Center, Anantapuramu has conducted several Minikit trails in the farmers field to improve the production potentialities of new varieties.

Materials and Methods

The present study was carried out by DAATT Centre, Anantapuramu during the kharif season from 2015-16 to 2017-18 (3 years) in 15 different locations of Anantapuramu district. A total of 15 demonstrations were conducted in 5 different villages viz., Dharmapuram, Krishnamareddypalli, Narpala, Maruru, M. Thimmapuram, Tarimela, Kottalapalli, Vasanthapuram, Siddagurapalli, Patnam, Venkatapuramu, Chapatlavaripalle. The main objective of this study to demonstrate the improved technologies of Groundnut production

potential in different villages. Farmers were provided seed pods of groundnut demo variety/entry (K-1812), training programs and time to-time advisories. The demonstration results were compared with local variety i.e. K-6. The demo test entry of groundnut K-1812 was developed at Agricultural Research Station, Kadiri, Andhra Pradesh.

Results and Discussion

The improved package of practices was more important with technological intervention for the productivity and profitability of Groundnut. Similar observations were reported [1-2]. The pod yield of demonstration plots was higher as compared to farmers practice, the reason could be the demonstrated variety K-1812 was yielding variety, dark foliage, Drought resistant and resistance to sucking pests. A comparison of yield performance between demonstrated practices and local checks was shown in Table 2.

Table 1. Characteristics of Groundnut varieties selected for the experiment.

Treatments	Variety release year	Duration (Days)	Yield (Qt/Ha)	Special features
K-6	2005	105-110	18-24	Tolerant to leaf spot
K-1812	2018	110-115	30-35	Drought resistant, pest and disease resistant and high yielding

Table 2 Production particulars of groundnut as grown under minikit demonstrations and existing farmer's practices (FP)

Year	No of Demos	Yield (Kg/Hec) (Demo)	Yield (Kg/Hec) (Control)	Increased yield	% pod yield increase over FP
2015-16	15	1092	980	112	10.25
2016-17	15	1250	990	260	20.76
2017-18	15	1220	970	250	20.49
Average	15	1187	980	207	17.16

Table.3 Economic particulars of groundnut as grown under minikit demonstrations and existing farmer's practices (FP)

Year	Cost of Cultivation		Gross returns		Net returns		B:C Ratio		Net return increase over FP (%)
	Demo	FP	Demo	FP	Demo	FP	Demo	FP	
2015-16	23750	23750	51979.2	46648	28229	22898	2.2	1.9	23.3
2016-17	23750	23750	60000	47520	36250	23770	2.5	2.0	52.5
2017-18	23750	23750	58560	46560	34810	22810	2.4	1.9	52.6
Average	23750	23750	56857.3	46942	33107	23192	2.4	1.9	21.1

Extension Education, Special Issue: 32-35.

Productivity

Results of 15 Minikit demonstrations conducted during 2015-16 to 2017-18 in 15 farmers' fields revealed that the average higher yield (1187 kg/ha) of

groundnut were recorded in demonstration fields as compared to farmers practices average pod (980 kg/ha) yield. The results clearly indicated that the yield of groundnut could be increased by 17.16% over the yield obtained under farmer's practices of groundnut

cultivation due to the adoption of improved variety K-1812 with appropriate production technology. Similar results were also observed by [3-5].

Profitability

The economics of groundnut production under minikit demonstrations and farmer's practices have been presented in Table 3. The average gross return (Rs. 56857.3/ha) and net return (Rs. 33107/ha) in Minikit demonstrations were found higher than the farmer's practices gross return (Rs. 46942/ha) and net return (Rs. 23192/ha). The average net returns 21.1 % higher than that of farmer's practice. The B: C ratio exhibited the same trend as in gross and net return which was found 2.4 in Minikit demonstrations and 1.86 in farmer's practice. It showed that the adoption of demonstration technology by farmers would be the higher economic and gainful proposition. Similar results were also reported by [6-10].

Conclusion

From the above findings, it can be concluded that by conducting Minikit demonstrations of improved variety with intervention practices of proven technologies in farmer's fields, groundnut productivity enhanced to a great extent which increased the income level of farmers and improved the livelihood of the farming community. Farmers were motivated by Minikit demonstrations in groundnut crop and they would adopt these technologies in the coming years.

References

- [1.] Bairwa R K, Verma S R, Chayal K and Meena N L (2013). Popularization of improved black gram production technology through front line demonstration in humid southern plain of Rajasthan. *Indian J Ext Edu and R* 21: 97-101.
- [2.] Dhaka B L, Meena B S and Suwalka R L (2010). Popularization of improved maize technology through Frontline Demonstration in South-eastern Rajasthan. *J Agril Sci*(1):39-42.
- [3.] Dubey, S., Tripathy, S., Singh, P. and Sharma, R. K. (2011). Impact of Improved Technology on soybean productivity in a frontline demonstration. *Indian Journal of Extension Education*, 47(3): 100-103.
- [4.] Gaur, V and Jadav, P. (2020). Impact of Demonstrations on Productivity and Profitability of Greengram in Gandhinagar district of Gujarat. *Journal of Krishi Vigyan*. 2020, 8 (2) : 174-177.
- [5.] Jat, A. S. and Katiyar, A. K. (2015). Impact of frontline demonstrations on productivity and profitability of groundnut. *International Journal of Basic and Applied Agricultural Research*, 13: 321-325.
- [6.] [6]. Lakhani, S. H., K. P. Baraiya and Baraiya, A. K. 2020. Impact of Cluster Frontline Demonstrations (CFLDs) on *kharif* Groundnut Productivity and Income of Farmers in Jamnagar District of Gujarat. *Int.J.Curr.Microbiol.App.Sci*. 9(11): 1116-1120.
- [7.] Pawar, Y., Malve, S. H. and Patel, G. J. (2017). Assessing yield gap analysis of groundnut through cluster frontline demonstration in Banaskantha district of Gujarat. *Gujarat Journal of Extension Education, Special Issue*: 32-35.
- [8.] Samui S K, Maitra S, Roy D K, Mondal A K and Saha D (2000). Evaluation of front- line demonstration on groundnut (*Arachis hypogea* L.) in Sundarbans. *J Indian Soc Coastal Agri Res* 18(2): 180-183.
- [9.] Singh G, Dhaliwal NS, Singh J and Sharma K (2011). Effect of frontline demonstrations on enhancing the productivity of mustard. *Asian J Soil Sci* 6: 230-33.
- [10.] [10]. Undhad, S. V., Prajapati, V. S., Sharma, P. S., Jadav, N. B. and Parmar, A. R. (2019). Role of cluster frontline demonstrations in the enhancement of groundnut production. *Journal of Pharmacognosy and Phytochemistry*, 8(4): 1862-63.