



Role of Minikit Demonstrations in Improvement of Bengal Gram Production in Anantapuramu District of Andhra Pradesh

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

Article Information

DOI: 10.9734/CJAST/2022/v41i2131750

Open Peer Review History:

This journal follows the Advanced Open Peer Review policy. Identity of the Reviewers, Editor(s) and additional Reviewers, peer review comments, different versions of the manuscript, comments of the editors, etc are available here: <https://www.sdiarticle5.com/review-history/88220>

Short Research Article

Received 15 April 2022
Accepted 20 June 2022
Published 27 June 2022

ABSTRACT

The study on the effects of minikit demonstration on Bengal gram was conducted by DAATT Centre, Anantapuramu, in five locations with 20 farmers during the rabi seasons of 2015-18. The results revealed that the minikit variety NBeG – 452 recorded highest average yield 1530 kg/ha and Control variety JG -11 recorded average yield 1150 kg/ha respectively. The same trend was found in case of income, which was Rs. 76,500/- and Rs.57,500/- respectively. Cost benefit ratio for demonstration and control was 3.82 and 2.85, respectively. It can be concluded that the Bengal gram production and area could be improved by encouraging the farmers through demonstration on bulk area and capacity building programs.

Keywords: Demonstrations; bengal gram; minikits; Anantapuramu; DAATT center.

1. INTRODUCTION

Andhra Pradesh state has observed in Bengal gram cultivation of last decade it can be termed

as the “Bengal gram revolution”. Bengal gram is the most important Rabi pulse crop in Andhra Pradesh state mainly sown in October – November and harvested in February. In Andhra

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Pradesh, Bengal gram is cultivated in an area of 4.0 - 5.0 lakh hectares annually. Crop duration is 90 – 100 days depending on the variety. Bengal gram is a pulse crop which usually grown in cold weather. It is grown as a rabi crop in tropical zone and as summer crop in temperate zone. It will give good yields in cool climate with good sufficient sunlight. The area under Bengal gram has increased from 1, 20,000 hectares in 1997-98 to 6,38,000 hectares by 2007-08. However, more important than this is the increased productivity of Bengal gram. Bengal gram productivity has increased from 750 kgs to 1448 kgs. This could be possible through high yielding varieties, improved varieties and adoption of best management practices [1].

Bengal gram is the major rabi crop in Anantapuramu district with 80,000 hectares. So, it is necessary to introduce new varieties in Anantapuramu, the suitability of new technologies were tested through Minikit trails [2,3]. The demonstrations like minikits, plays a major role to determine the suitability of new variety to a particular locality. Minikit demonstration is the main intervention of DAATT Center to determine the suitability of new variety to a given locality under farmer's condition [4-6]. Minikits also known as adoptive trails which is small sized observation plots are laid out simultaneously in a wide geographical area comprised of several agro climatic zones [7-9]. The results of this study would provide scope for researchers and extension agents to further improvement of area and production of Bengal gram in Anantapuramu district as well as Andhra Pradesh.

2. MATERIALS AND METHODS

The present research study was conducted during the rabi season from the years 2015-16 to 2017-18 by DAATT Center in Anantapuramu district of Andhra Pradesh. Four villages namely Raketla, S. Timmapuram, Ganjikuntla and Pedda koukuntla were selected purposely based on highest area under Bengal gram cultivation in that villages. A total of 20 farmers were selected based on their innovativeness, progressive and activeness in adoption of latest technologies with

the help of department officials, DLCC members and direct observation while during field visits and other interactive meetings. All 20 demonstrations were conducted for three consecutive years in the farmer fields with a main objective of assessing the suitability and performance of new entry variety of Bengal gram under the farmer field condition. The high yielding Bengal gram variety NBeG – 452 was used as a demonstration and JG-11 Used as control.

3. RESULTS AND DISCUSSION

3.1 Yield

Minikit demonstration on Bengal gram was conducted by using new entry variety NBeG – 452 in 20 farmers' fields covering with four villages of Anantapuramu district. The results in Table 2 revealed that average highest mean yield 1530 kg/ha recorded in demonstration variety i.e. NBeG – 452 followed by 1150 kg/ha in control variety i.e. JG – 11 variety.

3.2 Income

The data shown in Table 2 revealed that in case of demo variety the gross and net returns, was Rs. 76,500/- and 56,500/- and whereas in case of control variety it was observed as Rs. 57,500/- and Rs.37,500/- ha, respectively, which is lower than the demo variety. Benefit cost ratio for demonstration and control was 3.82 and 2.85 respectively. Similar results were perceived by Rehan et al. [10] and Lal and Ajit [11].

3.3 Overall Impact of Demonstration

About 24.83 percentage increased yield and 33.62 percentage increased net returns was observed in demo variety as compared to control variety. The reason for above trend might be the demo variety NBeG - 452 has shown increased yield as compare to control variety JG-11. These results were agreeing with the findings of Nalatwadmath et al. [10], Lal and Ajit [11] and Satybhan [13].

Table 1. Characteristics of bengal gram varieties selected for experiment

Variety	Variety release year	Duration (Days)	Yield (Q/acre)	Characteristics
JG -11	1999	95-100	7-8	Resistance to Fusarium wilt
NBeG - 452	2020	95-100	10-12	Resistance to wilt

Table 2. Details of yield and economics of minikit demonstration on Chickpea

Variety	Yield (kg/ha)	Cost of Cultivation (Rs./ha)	Gross returns (Rs./ha)	Net returns (Rs./ha)	B:C ration (Rs./ha)
NBeG – 452 (Demo)	1530	20000	76,500	56,500	3.82
JG-11 (Control)	1150	20000	57,500	37,500	2.85

4. CONCLUSION

Minikit demonstration on Bengal gram clearly shown that there was 24.83 per cent increase in yield was observed in demo variety over farmer's practice. It was perceived that potential yield can be achieved by providing suitable high yielding varieties. Further dissemination of these varieties on large area can be achieved by the successful implementation of front line demonstrations, training programs, exposure visits, field days and showing success stories to the farmers.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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Peer-review history:

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