



ISSN (E): 2277-7695  
ISSN (P): 2349-8242  
NAAS Rating: 5.23  
TPI 2022; 11(12): 6213-6215  
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Received: 10-10-2022

Accepted: 13-11-2022

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the References

## Cluster bean cultivation through extension approach

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### Abstract

Cluster bean (*Cyamopsis tetragonoloba*) is one among the vegetable crop and also a drought tolerant typical legume vegetable cultivated predominantly under tropical and subtropical regions. It is locally known as guar and thrives well in semiarid regions. In India, cluster bean is grown in total 4.10 million hectares area and production is 1.85 million tonnes and annually contributing to around 80% share to the world's total production (Anonymous 2018). Cluster bean is an important legume cultivated mostly on marginal and sub marginal lands of arid and semi-arid regions. Overall, India produces around 80% of global cluster bean production (Bhatt, 2021) KVK, Vamban, Pudukkottai conducted total of 10 front Line Demonstration on cluster bean variety MDU 1 in farmer's field of Pudukkottai district. Front Line Demonstration helps in speedy and wider dissemination of the improved proven technology to the farming community. The pod yield of cluster bean under demonstration plot was an average of 6600 kg/ha, while, in farmer's local practices plot with an average of 5100 kg/ha. The pod yield was increased from 29 per cent over farmer's practices. In control BCR is 2.3 and 2.6 is in treated. Hence to motivate the farmers for adoption of MDU 1 variety with ICM practice.

**Keywords:** In Cluster bean, pod yield, economics, technology gap, extension gap yielding disease resistant varieties performance were studied in compact block through Krishi Vigyan Kendra to enhanced adoption of modern technologies to generate yield data from farmers field. Keeping this in view, KVK Vamban, Pudukkottai conducted 10 demonstrations on cluster bean crop at farmer's field during 2019-20 Kharif

### Introduction

Cluster bean (*Cyamopsis tetragonoloba*) is one among the vegetable. Well grown in Rajasthan, Tamil Nadu, Gujarat, Haryana, Punjab, Uttar Pradesh and Madhya Pradesh are major cluster bean growing states. Due to high degree of drought and salinity tolerance, guar could be a valuable alternative crop for the exploitation of the semiarid environment, where high temperature, poor erratic rainfall and elevated soil salt content restrict the cultivation of other crops. Guar could be a valuable alternative crop for the exploitation of the semiarid environment, where high temperature, poor erratic rainfall and elevated soil salt content restrict the cultivation of other crops (Bamboriya *et al.*, 2020) [2].

### Objectives of this study

1. To study the KVK intervention
2. To study the socio-ecological status sample respondents
3. Constrains faced by farmers
4. BCR

### Materials and Methods

KVK, Vamban, Pudukkottai conducted total of 10 front Line Demonstration on cluster bean variety MDU 1 was conducted in farmer's field in a compact block of Thiruvankulam of Pudukkottai district during Kharif 2019-20. The selection of villages was done on basis of non adoption of improved and recommended varieties. After the selection of villages, most approachable side of farmer's field was selected, so that the performance of demonstrated technology can be seen by other farmers. The farming situation was irrigated and soil was sandy loam low in nitrogen, medium in phosphorus and medium in potash.

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### Intervention of KVK

Agricultural Universities and Research Centres developed so many production technologies but the productivity of cluster bean is still low due to poor transfer of technology from the points of its development to the points of its utilization hence a wide gap has been observed between knowledge of production and knowledge of utilization (Dayanand *et al.*, 2014) [3]. Use of improved seed, seed rate, seed treatment, sowing time, recommended dose of fertilizer, weed control and plant protection measure gives a higher yield of cluster bean as compared to farmer's practices (Singh and Sharma 2018) [4]. Therefore, Front Line Demonstration (FLD) on cluster bean MDU 1 at farmer's field might be helpful to establish the technology at farming community.

### Socio ecological study

Front Line Demonstration (FLD) of cluster bean MDU 1 was found effective for farmers in changing mind set, attitude, skill and knowledge of improved practices of cluster bean cultivation including adaption. Farmers and scientist relationship also improved by this and built confidence between them. Demonstrated farmers is a good primary source of knowledge or information on improved practices of cluster bean MDU 1 cultivation and also source of good quality seed in locality and surrounding area for next season. Front Line Demonstration helps in speedy and wider dissemination of the improved proven technology to the farming community.

### Constraints faced by farmers

- unavailability of quality seeds in time
- poor crop management practices
- unawareness in non adoption of recommended production
- unawareness in non adoption of plant protection technologies

### Result and Discussion

**Pod yield:** The pod yield of cluster bean under demonstration plot was ranged from 6200 kg/ ha to 6900 kg/ha with an average of 6600 kg/ha, while, in farmer's local practices plot it ranged from 4300 kg/ha to 5900 kg/ha with an average of 5100 kg/ha. The pod yield was increased from 29 per cent over farmer's practices (local check) during.

An additional investments of Rs. 3250/ha consist with scientific monitoring of demonstration and non-monetary factors resulted in additional return of Rs. 64640/ha.

### Conclusion

On the basis of Front Line Demonstration it can be concluded that by adopting recommended package of practices under demonstration can increased 29 per cent yield of cluster bean over farmer's practices. The increase was recorded with little extra spending of Rs 3600 per hectare. This amount is not big enough that even a small and marginal farmer can afford this. The adoption of improved technology not affected by the additional cost but the ignorance and unawareness is the primary reason and it is quite appropriate to call such yield gap as extension gap. Moreover, extension gap can be also be minimized by adopting such technology under FLD. In control BCR is 2.3 and 2.6 is in treated. Hence to motivate the farmers for adoption of MDU 1 variety with ICM practice.

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