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Impact Assessment of Okra Crop Production Practices for Coastal Karnataka

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ABSTRACT

On farm testing of two different technologies released from UAS, Bangalore and KAU, Thrissur were demonstrated at farmer's field keeping the farmer's practice as the check plot. The technology recommended by UAS, Bangalore includes application of RDF (N:P:K 125:75:63 kg/ha), FYM: 25t/ha, Neem cake @375kg/ha, seed treatment (soaking seeds in 0.2% Bavistin) and Spraying of Imidacloprid 17.8SL@ 0.5ml/lit for control of sucking pests resulted highest yield of 9.25 t/ha with B:C ratio of 2.13 as compared to the technology released from KAU, Thrissur includes application of RDF (N:P:K 110:35:70 kg/ha), FYM application@ 12 t/ha, Spray of Dimethoate 30EC@ 1.75ml/lt for control of sucking pests.

Key Words: Okra, Nutrients, Yellow Vein Mosaic, RDF and Yield

INTRODUCTION

Okra (*Abelmoschus esculentus* L.) is an annual vegetable crop, belongs to family Malvaceae. India is the largest producer of okra in the world. The area, production and productivity of okra in India was 533 mha, 6,461 MT and 12.11 t/ha respectively during 2013 (Anon 2014). The crop was very much susceptible to whitefly (*Bemisia tabaci* Gen.) transmitted yellow vein mosaic virus. The low productivity of the crop was attributed to the number of yield affecting factors such as low soil fertility, lack of knowledge on improved technologies and also less adoption of recommended cultivation practices. Singh *et al*. (2017) reported combine application of GA_3 and NAA also significantly increased the yield. Taking this into consideration, the present study was initiated to overcome the incidence of Bhendi Yellow Vein Mosaic Virus (BYVMV), two different technologies on management practices in okra released by UAS, Banglore and KAU, Thrissur were evaluated keeping the farmers practice as control.

MATERIALS AND METHODS

The present study was conducted in Udupi district of Karnataka state during 2012-13 to 2013-14. In three villages, 30 demonstrations were conducted to assess better management practices for control of BYVMV through On Farm Testing. Two different management packages suggested by University of Agricultural Sciences, Bangalore and Kerala Agriculture University, Thrissur were tried as two different treatments, keeping Farmer's practice as check plot. The details of the trial were mentioned in table 1.

RESULTS AND DISCUSSION

Results indicated that the yield attributes were affected by different packages of cultivation (Table 2). Technology option - I registered higher fruit weight (187.5 g/plant) and higher yield (92.5 q/ha) followed by Technology Option- 2 which recorded fruit weight of 163.4 g/plant and yield of 85 q/ha. The lowest fruit weight of 134 g/plant and yield of 75q/ha was recorded in farmer's practice.

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Table 1. Demonstrated package of practices and farmer's practice for Okra cultivation

Sr. No.	Particular	Farmers' Practice	Technology Option-1	Technology Option-2
1.	Source of the Package	-	UAS, Bangalore	KAU, Thrissur
2.	Variety resistant to BYVMV	Local variety, susceptible to BYVMV	BYVMV resistant variety-Arka Anamika	BYVMV resistant variety-Arka Anamika
3.	Seed Treatment	-	Soaking seeds in 0.2% Bavistin and Seed treatment with Imidacloprid 60FS	-
4.	Fertilizer Dose	Application of fertilizer (N:P:K @ 125:125:125 kg/ha)	RDF (N:P:K 125:75:63 kg/ha), N in two splits 50% at the time of sowing and 50% at 30 DAS	RDF (N:P:K of 110:35:70 Kg/ha), N in two splits 50% at the time of sowing and 50% at 30 DAS
5.	FYM	FYM @ 10 t/ha	FYM @ 25t/ha, Neem cake @ 375kg/ha	-
6.	Plant protection measures for sucking pests	Not followed	Spraying of Imidacloprid 17.8 SL @0.5 ml/lit	Spraying of Dimethoate 0.05%

Table 2. Yield attributes of Okra in different demonstrated trials.

Technology Assessed	Fruit weight (g/plant)	Yield (q/ha)	1st Symptom of Occurrence of BYVMV	No. of sucking Pests / 5 leaves	% Disease Occurrence of BYVM
Farmer's practice	134.0	75.0	28 DAP	16.50	14.60
Technology Option 1	187.5	92.5	36 DAP	3.30	2.60
Technology Option 2	163.4	85	31 DAP	10.15	5.10

In the two years data the Technology Option-1 showed less incidence of BYVMV compared to Technology Option 2 and Farmer's practice (Table 2). First occurrence of the BYVMV symptom was observed early in the plots where farmer's practices were adopted. Significant variation with date of sowing spacing was observed by Morwal and Patel (2017). These results were mainly due to the fact that the package included resistant variety for BYVMV, integrated pest management practices such as seed treatment with insecticide, use of neem cake at the time of sowing and also use of effective plant protection chemicals for the control of white flies, which plays a major role in the transmission of the virus from infected to the healthy plant (Sheikh 2013). Similar results of yield enhancement in okra with recommended packages were observed by Kacha and Patel (2015), Singh and Kumar (2013) and Bhagat *et al* (1997).

The results of economic analysis of okra production under different technology options reveals that the gross cost in the Technology Option-1 is higher than the farmer's practice by about 13.97 per cent and has also recorded higher

Table 3. Economic Impact of Okra under different Technology Packages.

Technology Assessed	Gross Cost (Rs/ha)	Gross Return (Rs/ha)	Net Return (Rs/ha)	B:C Ratio
Farmer's practice	58,230.00	1,12,125.00	53,895.00	1.93
Technology Option-1	66,370.00	1,41,260.00	74,890.00	2.13
Technology Option-2	65,250.00	1,30,600.00	65,350.00	2.00

gross returns (Rs 1,41,260/ha) and net returns (Rs 74,890/ha) (Table 3). In case of Technology Option-2, gross return (Rs 1,30,600/ha) and net return (Rs 65,350/ha) were higher than the farmer's practice. These findings are similar to the results obtained by Singh and Agarwal (2013).

CONCLUSION

The results brought out that yield of okra could be increased from 13.3 per cent to 23.3 per cent with intervention of BYVM resistant variety, seed treatment, RDF and integrated pest management. Hence, adopting integrated approach in cultivation of okra will increase the income as well as the livelihood of the farmers.

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