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Research Article

INCREASING IN PRODUCTION OF SUNFLOWER IN TIRUCHIRAPALLI DISTRICT THROUGH CLUSTER FRONT LINE DEMONSTRATIONS

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Abstract: The cluster front line demonstration of sunflower was conducted at Tiruchirapalli district during 2016-17 in the farmers field in different locations through cluster front line demonstration. An area of 20 ha at 40 beneficiaries field of three blocks. Results revealed that average highest yield 16.9 q/ha found in demonstration plot followed by 13.8 /ha in control plot. The same trend found in case of CFLDs gross and net monetary returns, was Rs. 71501/- and Rs. 43508/- ha and for control Rs. 44662/- and Rs. 19912/-ha, respectively. Benefit cost ratio for demonstration and control was 2.55 and 1.80 respectively. It can be concluded that the oilseed production could be enhanced by encouraging the farmers through adoption of recommended technologies which were followed in the CFLDs. with latest technologies.

Keywords: Sunflower, Imidachloprid, Yield, Biocontrol agents

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Introduction

Sunflower (*Helianthus annuus* L.) is an important oil seeds and good source of vegetable oil crop in India. The sunflower seed contains 36-52 percent of oil and 28-32 percent of protein [1]. In India, it is mostly grown in the states of Karnataka, Maharashtra, Andhra Pradesh and Tamil Nadu with potential scope of growing in non-traditional areas like West Bengal [2]. In Tamil Nadu it is grown in Summer season as of its short duration crop characteristics and it its well in multiple cropping systems. In Tiruchirapalli district, during summer time farmers are cultivating Sunflower after paddy harvest. The last year production of sunflower in Tiruchirapalli district is 3993ha. It has been reported that sunflower oil is good source of nutrients, vitamins, minerals and antioxidants. The sunflower oil is gaining more importance as it is free from acid and rich in Vitamin-A, roasted sunflower seeds are also used as snacks. Because of increment in domestic consumption of sunflower edible oil, its cultivation is in critical situation in India. The yield of the crop is low due to lack of awareness on improved seeds and cultivation practices. The "Cluster Frontline Demonstrations on *Rabi* Oilseed 2016-17" to ICAR-ATARI, Bengaluru through National Mission on Oilseeds , a scheme sponsored by central government. This project was implemented in Krishi Vigyan Kendra (KVK) with main objective to increase the production and productivity through Frontline demonstrations (FLDs) with latest technologies

Materials and Methods

The cluster front line demonstration of sunflower was conducted at Two blocks of Tiruchirapalli district. Tiruchirapalli during 2016-17 in the farmers field in different locations through cluster front line demonstration. The villages were selected based the participatory Rural Appraiasl method and cultivation practices of the Tiruchirapalli district. The blocks are namely Musiri and Thathanghayarpettai, an area of 20 ha at 40 beneficiaries field. The season for sowing of sunflower in Tiruchirapalli district is Summer. Before conduct of demonstrations, training to the farmers of respective villages was imparted with respect to envisaged technological interventions. All other steps like site and farmer's selection, layout of demonstration and farmers participation etc.

The sunflower seed was treated with Imidachloprid 7.5 ml/ha to avoid pest and disease. The following critical inputs *viz*., sunflower seed (CoSFV5), TNAU Mineral mixture (Sunflower), Integrated Nutrient Management and Integrated PM kit were distributed to beneficiaries. Farmers were trained to follow the package and practices for sunflower cultivation as recommended by the Tamil Nadu Agricultural University and need based input materials provided to the farmers. The farmers followed the full package of practices like seed treatment, bio fertilizer Inoculation, fertilizer application, water and weed management, insect-pest management *etc*. In case of local check, the traditional practices were followed in existing varieties by the farmers. The yield parameters were recorded for both check and demonstrated variety of sunflower.

Table-1 Differences between farmers' practices and technological intervention for Sunflower

SN	Particulars	Demonstration Package
1	Variety	CoSFV5
2	Seed treatment	Imidachloprid
3	Time of Sowing	End of March 2017
4	Package of Practices	Seed treatment Integrated crop management and Integrated Pest and Disease Management
5	Bio control Agents	*Pseudomonas fluorescens* *Rhizobium*

Result and Discussions

The total number of twenty eighty Frontline demonstrations on sunflower seed was laid out in an area of 20 hectares in farmer's field in Thiruthalaiyur, Kallur and Veeamachanpatti, villages of Tiruchirapalli district in Tamil Nadu. This variety gave the average yield of 16.90 q/ha in district. After the improved treatment with Imidacloprid 70 ws @ 7g/kg and line sowing method. Farm Yard Manure of 10 t/ha ha was applied for basal. Integrated nutrient management was followed as per soil test management. TNAU MN mixture @ 10 kg / ha was applied at the time of sowing.

Pheromone traps were used to monitor the pod borer incidence and suitable management practices *i.e*., application of insecticides was done.

Details of yield and economics of cluster frontline demonstration on Sunflower

Treatment	Yield (q/ha)	Gross cost (Rs./ha)	Gross Income (Rs./ha)	Net Income (Rs./ha)	B:C ratio
Farmers practices	13.8	24750	44662	19912	1.80
Designer seed + Bio control agents + Pheromone traps	16.9	27993	71501	43508	2.55

Results concluded that average highest yield 16.9 q/ha found in demonstration plot followed by 13.8 /ha in control plot. The same trend found in case of CFLDs gross and net monetary returns, was Rs. 71501/- and Rs. 43508/- ha and for control Rs.44662/- and Rs. 19912/-ha, respectively. Beneit cost ratio for demonstration and control was 2.55 and 1.80 respectively, the similar report obtained by Vikram, *et al*., (2018)[3]. This improvement in yield might be due to the application of seed treatment, use of biofertilizers, timely weed and water management and integrated pest management practices.

Conclusion

The findings of the study revealed that, the percent increment in yield of sunflower to the extent of 18.34 % in Cluster Frontline Demonstrations over the farmers practice created greater awareness and motivated the other farmers to adopt the improved package of practices of sunflower. These demonstration trails also enhance the relationship and confidence between farmers and KVK scientists. The recipient farmers of Cluster Frontline Demonstrations also play an important role as source of information and quality seeds for wider dissemination of the improved varieties of sunflower for other nearby farmers.

Application of research: Cluster Frontline Demonstrations programme is a successful tool in enhancing the production and productivity of sunflower crop through changing the knowledge, attitude and skill of farmers

Research Category: Front line demonstration

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References

[1] Dutta A (2011) *Journal of Crop and Weed*, 7(2), 226-228.
[2] Rosa P.M., Antoniassi R., Freitas S.C., Bizzo H.R., Zanotto D.L., Oliveira M.F., Castiglioni V.B.R., (2009) *Helia*, 32, 145-156.
[3] Vikram Bharati, Singh U.K., Paswan A.K. and Ansari M.N. (2018) *International Journal of Current Microbiology and Applied Sciences*, 7, 03.