

Original Research Article

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## Cluster Frontline Demonstrations: A Tool for Productivity Enhancement and Dissemination of Technologies for Toria in Tirap District of Arunachal Pradesh, India

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### ABSTRACT

#### Keywords

CFLDs,  
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In toria the low production and productivity of local varieties is considered as one of the major constraints of traditional toria farming which has created gap between demand and supply of edible oil. Krishi Vigyan Kendra- Tirap of the ICAR-ATARI, Zone-VI, Guwahati conducted the Cluster Frontline Demonstration (CFLD) on oilseed to increase productivity and farmer income in the 12 villages during 2017- 18. Thus, 12 villages of the Tirap were selected to conduct the CFLDs on toria crop. For conducting the demonstrations the farmers were guided to follow up the recommended and latest technologies i.e. latest variety, seed treatment with bavistin and biofertilizer (Azatobacter) and integrated crop management. For dissemination of these technologies, total 42 extension activities were conducted across the district of this in which 681 farmers actively participated. Toria; variety TS-46 were demonstrated and it reported 51 per cent higher yield over the local check in Tirap. CFLD on 50 ha with 125 number of demonstration were allotted by ATARI, Zone- VI.

### Introduction

Oilseed crop, the second major group among agricultural crops after cereals, occupies an important position in Indian agricultural economy by virtue of its high fat content. Among oilseed crops, rapeseed mustard and toria is the third important group of oilseed crops in the world after soybean and palm oil. Vegetable oil constitutes an important part of our daily diet being source of energy, essential fatty acids and amino acids; while rapeseed-mustard oil contains 38-40 per cent crude protein, 12-13 per cent crude fibre and

7-8 per cent ash. In India, per capita consumption of vegetable oils is 13.36 kg/year/person, which is much lower than USA (36 kg/year/person) and world (17 kg/year/person) (Anonymous, 2015a). Domestic consumption of edible oils has increased substantially in India, over the years, with increasing population and improving purchasing power. It has touched the level of 19.12 million tonnes during 2014 against the domestic availability of 9.00 million tones whereas 10.12 million tonnes of edible oil requirement was fulfilled by imports (Anonymous, 2015b). It indicates that there is still a wide gap between edible oil

production and actual demand; this deficit is bridged through massive imports costing huge amount of foreign exchange. The Government decided to achieve self-sufficiency in edible oilseeds production by various technological interventions to overcome stagnant oilseed production through promoting latest production technologies in oilseed production. Government of India, again initiated technology under National Mission on Oilseeds and Oil Palm (NMOOP) by providing funds during August 2017-18 to the KVKs of ICAR-ATARI, Zone-VI, Guwahati to increase oilseed production in this Zone and achieve self-sufficiency in edible oils production through CFLDs. The objectives of CFLD was to demonstrate the improved technologies among the famers recommended by the State Agricultural Universities (SAUs) and Indian Council of Agriculture Research (ICAR) Institutes so that it would improve the production and generate interest in the growing of oilseed crops which is losing importance due to stagnation in the yield faced by farmers while executing the Cluster demonstrations.

**Materials and Methods**

The present investigations on CFLDs were conducted during *rabi* 2017-18 by the KVK Tirap of Arunachal Pradesh. The CFLD was conducted by demonstrating selected technology mainly to improve the production

and productivity of the area. The CFLDs were conducted in the farmer’s field in the district so that the maximum number of farmers can observe the demonstrations in the fields and interest for cultivation of the crop can be generated among the farmers as the main objective of CFLDs is seeing in believing. So a total of 125 demonstrations in an area of 50 hectares were conducted in Toria (variety: TS-46) during *rabi* 2017-18 (Table 1).

**Results and Discussion**

The improved variety seed as input was provided by the KVK to 125 farmers in 50 hectares areas along with the other essential inputs included in the full package of technologies were demonstrated. The list of beneficiaries was prepared for conducting the FLDs in selected blocks as given in Table 1; and the technologies were provided by the KVKs for Toria cultivation.

Farmers were guided to follow the recommended practices as per provided by the Assam Agricultural University- Jorhat. The details of the FLDs conducted have been given in Table 1. The basic inputs i.e. improved variety of Toria, biofertilizers and sulphur containing micronutrients were provided to the farmers. Locally cultivated varieties of Toria were used as local check (Table 2).

**Table.1** Details of FLDs on Toria

State	KVK	FLDs		Crop Variety	Demonstrated Technologies	Blocks
		No of Demos.	Area (Ha)			
Arunachal Pradesh	Tirap	125	50	TS-46	Improved Variety, INM, Biofertilizer (Azotobacter)	Soha, Namsang, Khonsa, Lawnu

**Table.2** Details the result of Toria

KVK	Blocks	Average Yield (q/ha)		% Increase
		Demonstration	Check	
Tirap	Soha	10.72	6.87	38.5
	Namsang	8.54	6.21	23.3
	Khonsa	9.43	7.16	22.7
	Lawnu	10.98	7.69	32.9

**Table.3** Extension activities conducted during Rabi season, 2017-18

Extension Activities	No of Programmes	No of Farmers
Awareness Camp	02	56
Seed Distribution	06	125
Lecture Delivered	06	148
Method Demonstration	03	24
Field Visit	14	57
Farmers Scientist Interaction	02	39
Kisan Gosthi	05	89
Field Day	04	141
<b>Total</b>	<b>42</b>	<b>681</b>





The maximum increase in yield was recorded in Soha block, 38.50 per cent higher over the local check followed by Lawnu block (32.9 %). In Namsang block, 23.3 per cent higher yield was recorded as compared to local check, while the minimum increase in yield reported in Khonsa block (22.7 per cent). This percentage increase in yield was due to demonstration of integrated crop management technology e.g. seed treatment of improved variety with Azotobactor, application of sulphur fertilizer and foliar spray of Potassium and Boron.

#### **Extension activities during cluster frontline demonstrations**

During CFLDs, a total of 42 extension activities were conducted across the selected village of all four blocks in which 681 numbers of farmers actively participated (Table 3). The extension activities comprised farmers-scientists interface, method demonstrations on scientific practices, *Kisan goshthis*, trainings, etc. KVK scientists usually visited farmers' fields, particularly to popularize oilseed cultivation in the district. KVK scientists paid visits to selected farmers where CFLDs on oilseeds were demonstrated. The main purpose of organization of field days was to disseminate the improved technologies i.e. biofertilizers, newly released variety etc. through the

demonstrations following the principle of "Seeing is believing".

In conclusion, the results signify that the production and productivity can be increased in oilseed production through Cluster demonstrations by motivating the farmers for the adoption of improved agro technologies which were demonstrated in the CFLD plots. But additional extension work is required to decrease the gap between demand and supply. However, soil moisture availability, rainfall conditions, climatic aberrations, diseases infestation and change in the location are also responsible for disparity in yield of the crop. Thus, technologies demonstrated under CFLDs were helpful to improve the production, productivity, farmer's income as well as increase in area under mustard crop.

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